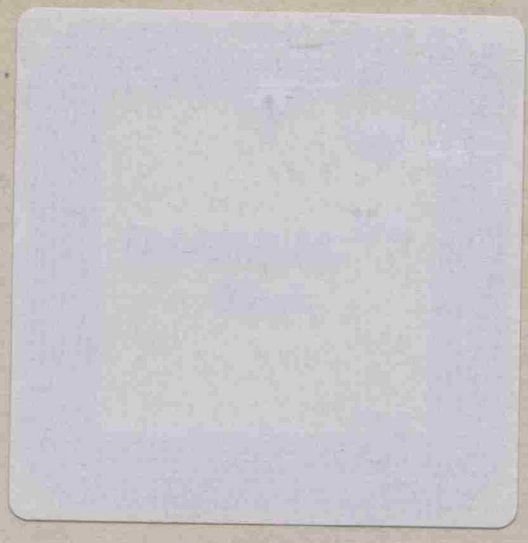
FLORA
of the Chicago Region



H. S. PEPOON



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June 1931

S R Esterly
chief guide.

AN
ANNOTATED FLORA
OF THE
CHICAGO REGION



WOODRUFF

TRAILING ARBUTUS (*Epigaea repens*)

AN ANNOTATED FLORA OF THE CHICAGO AREA

With Maps and Many Illustrations from Photographs of Topographic and Plant Features.

By H. S. PEPOON, B.S., M.D., Head Instructor in Botany and Agriculture, Lake View High School.



CHICAGO, ILLINOIS
1927

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CHICAGO

DEDICATED

TO THE MEMORY OF

PROFESSORS

E. J. Hill

DEAN OF ALL CHICAGO BOTANISTS

AND

Levi M. Umbach

BEST OF FRIENDS

AND MOST ENTHUSIASTIC OF

PLANT COLLECTORS.

FOREWORD

IT is a long time since we have had available a Flora of the Chicago Region. Many years ago Higley and Raddin published under the auspices of the Chicago Academy of Sciences, a Flora of Cook County, Illinois, and Lake County, Indiana. The supply of this has long been exhausted. For many years Dr. H. S. Pepoon, of the Lake View High School, has been vigorously active in the study of the flora of Chicago and vicinity, and for a long time he has had in preparation a Flora of the Chicago Region, which would take the place of the Higley and Raddin volume, so long out of print. The present volume is much more complete than the earlier Flora. It has descriptions and keys and a considerable body of descriptive text lacking in the older work. It is very fitting that the Chicago Academy of Sciences should publish this book also, and it deems itself peculiarly fortunate in having the services of so competent a man as Dr. Pepoon, and in having the opportunity to publish the volume at this time.

HENRY C. COWLES, *President*
Chicago Academy of Sciences.

PREFACE

AFTER many years of preparation and many more of waiting, THE FLORA OF THE CHICAGO REGION is presented to the public with the hope expressed that the delay has brought to those who read a more completely finished and to that extent, at least, a more satisfactory production.

Many of the matters that might with propriety be taken up in the preface, have for fuller consideration, been placed in the introduction. It is, however, needful to bring to the attention of those who use the book, a number of important facts offered either as explanation of matter inserted, or in recognition of valuable assistance rendered.

As to the completeness of the catalog, it is probably unnecessary to say that no flora is ever complete, for plants like all other living things come and go. What may be found today may be missing tomorrow, and for this reason, reference has been made many times to plants given a place in the list, which may be now exterminated, absent for a time, or, which, as solitary waifs from far regions may live precariously for a time and then vanish. Their introduction, however, has a definite value and need not be defended.

The botanists of the United States are divided into two more or less hostile groups when the matter of nomenclature is considered. A large proportion of the teachers, many field collectors, and a host of other plant lovers use Gray's manual and have so used it for years. Many botanists, particularly those having to do with the scientific activities or explorations of our government, take Britton and Brown as their chief authority. Others, chiefly monographers of small groups are largely a law unto themselves, using any name that to them appears proper. In this work the catalog name is taken from Gray, the synonym from Britton and Brown.

Regarding the keys used for the determination of particular plants, several things must be made emphatic:

1.—No attempt is made to make keys for grasses, sedges, rushes, pondweeds, and similar very difficult groups. With these the trained specialist has his troubles, and for the untrained private citizen they may be considered hopeless.

2.—They are original and while largely used by the author to test their working value, they are, like all keys, subject to failure now and then. Whatever their good or bad points, any criticism will be cheerfully accepted.

3.—The keys are distributed through the Flora where they are to be used, except certain general ones that cover much ground. It is hoped that this will prove a helpful feature.

4.—It is expected that the introduction of special keys for trees, shrubs, and vines will be a feature to be appreciated by those of little botanical training. In this connection the author desires to express his hearty thanks to Mr. V. O. Graham for his fine key for trees in winter.

5.—Keys are artificial, not elastic, not easily adapting themselves to the multitudinous variations of the living things they seek to "run down," and so must be used with good sense and discrimination. Finally, the author is under lasting indebtedness to many, acting either in association or as individuals, for the assistance given in so many ways that has made possible the publication of the Flora:

To the Chicago Academy of Sciences for its faith in the writer, and its vital financial support.

To the officers and office force of the Academy, who in every possible manner rendered assistance, particularly in the trying days of proof reading.

To the friends who so cheerfully furnished photographs that the work might be suitably illustrated.

And, in conclusion, in an especial manner, to Mr. Frank M. Woodruff whose wonderful skill in photography has so often been called on in the illustrations of this book.

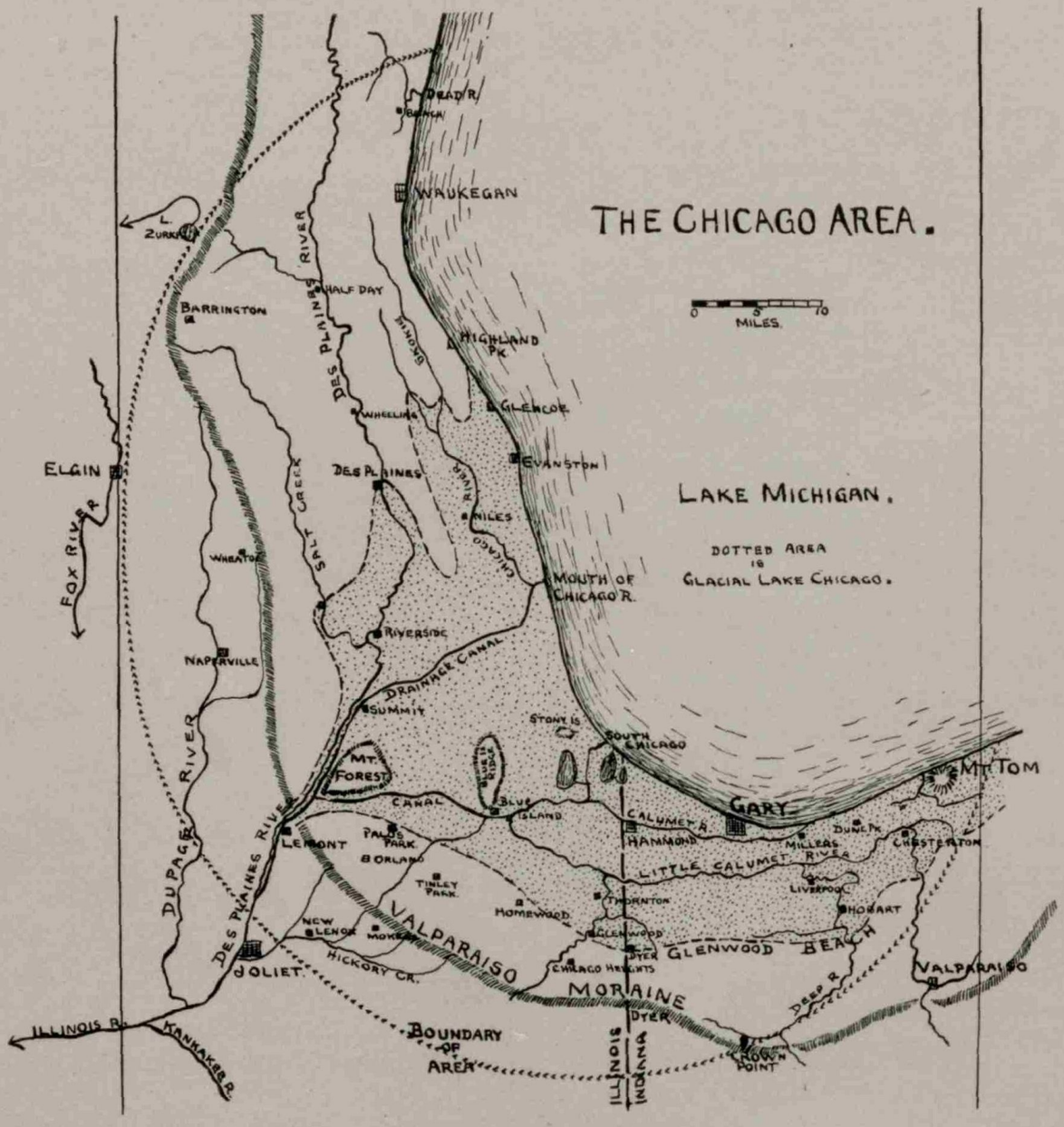
TABLE OF CONTENTS

	PAGE
Abbreviations of Authors' Names	xii
Introduction	xv
The Waukegan Moorlands	1
The North Shore and Northern Region	15
The Des Plaines River Drainage Basin	37
The Western Morainal Uplands	37
The Southern and Southwestern Moraine	61
The Sand and Dune Region of the Southeast	101
Catalog of the Fern and Seed Plant Groups	137
Glossary	541
Index	545

ABBREVIATIONS OF AUTHORS' NAMES

A. Br.	Alexander Braun.
Adans.	Michel Adanson.
A. DC.	Alphonse De Candolle.
Ait.	William Aiton.
All.	Carlo Allioni.
Anders.	Nils Johan Anderson.
Andrz.	Anton Lukianowicz Andrzejowski.
Arn.	George A. Walker Arnott.
Asch.	Paul Ascherson.
B. & H.	George Bentham and Joseph Dalton Hooker.
Bab.	Charles Cardale Babington.
Barn.	F. Marius Barneoud.
Beauv.	A. M. F. J. Palisot de Beauvois.
Benn.	Arthur Bennett.
Benth.	George Bentham.
Bernh.	Johann Jacob Bernhardi.
Bess.	Wilhelm S. J. G. von Besser.
Bigel.	Jacob Bigelow.
Boeckl.	Otto Boeckeler.
Boiss.	Edmond Boissier.
Borkh.	M. B. Borkhausen.
Brit.	Nathaniel Lord Britton.
B. S. P.	Nathaniel Lord Britton, E. E. Sterns, and Justus F. Poggenberg.
Burm. f.	Nikolaus Laurens Burman.
C. & S.	Adalbert von Chamisso and D. F. L. von Schlectendal.
C. A. Mey.	Carl Anton Meyer.
Casp.	Robert Caspary.
Cass.	Henri Cassini.
Cav.	Antonio Jos' Cavanilles.
Celak.	Ladislav Celakovsky.
Cerv.	Vicente Cervantes.
Chapm.	Alvan Wentworth Chapman.
Chois.	Jacques-Denis Choisy.
Coult.	John Merle Coulter.
Cyrill.	Domenico Cyrillo.
C. & R.	John Merle Coulter and Joseph Nelson Rose.
Darl.	William Darlington.
Davenp.	George Edward Davenport.
DC.	Augustin Pyramus De Candolle.
Dcne.	Joseph Decaisne.
Desf.	Réné Louiche Desfontaines.
Desr.	Desrousseaux.
Desv.	Augustin Nicaise Desvaux.
Dietr.	Albert Dietrich.
Dougl.	David Douglas.
Dumont.	G. L. M. Du Mont de Courset.
Dumort.	Barthelemy C. Dumortier.
Ehrh.	Friedrich Ehrhart.
Ell.	Stephen Elliott.
Endl.	Stephan Ladislaus Endlicher.
Engelm.	George Engelmann.
Forst.	J. R. & George Forster.
Fourn.	Eugène Fournier.
Froel.	Joseph Aloys Froelich.
Gaertn.	Joseph Gaertner.
Gaud.	Charles Gaudichaud-Beaupré.
Gilib.	Jean Emmanuel Gilibert.
Gmel.	Samuel Gottlieb Gmelin.
Good.	Samuel Goodenough.
G. & G.	Charles Grenier and Dominique Alexandre Godron.
Griseb.	Heinrich R. A. Grisebach.
Guss.	Giovanni Gussoni.
Hack.	Eduard Hackel.
Hassk.	Justus Carl Hasskarl.
Hau.	Carl Haussknecht.
Haw.	Adrian Hardy Haworth.
H. B. K.	Alexander von F. Humboldt, Aimé Bonpland, and C. S. Kunth.
Heg., Hegel.	Friedrich Hegelmaier.
Hitchc.	Albert Spear Hitchcock.
Hochst.	Christian F. Hochstetter.
Hoffm.	George Franz Hoffmann.
Hook.	William Jackson Hooker.
Hornem.	Jens Wilkin Hornemann.
Huds.	William Hudson.
Jacq.	Nicolaus Joseph Jacquin.
J. F. Gmel.	Johann Friedrich Gmelin.

Karst.	Hermann Karsten.
Kl.	Johann Friedrich Klotsch.
L.	Carl von Linné or Linnaeus.
Lag.	Mariano Lagasca.
Lam.	J. B. A. P. Monnet Lamarck.
Lamb.	Aylmer Bourke Lambert.
Leavenw.	Melines C. Leavenworth.
Lehm.	J. G. C. Lehmann.
Less.	Christian Friedrich Lessing.
Lest.	Lestiboudois.
L'Her.	C. L. L'Héritier de Brutelle.
Lightf.	John Lightfoot.
Lindl.	John Lindley.
MacM.	Conway MacMillan.
Man. Ed. 6	Gray's Manual, Edition Sixth.
Marsh.	Humphrey Marshall.
Max.	Carl Johann Maximowicz.
Meisn.	Carl Friedrich Meisner.
Merr.	Elmer D. Merrill.
Mey.	Ernst Heinrich Meyer.
Michx.	André Michaux.
Mill.	Philip Miller.
Moench.	Otto Freiherr von Moenchhausen.
Moq.	Alfred Moquin-Tandon.
Muell.	Jean Mueller.
Muhl.	G. H. E. Muhlenberg.
Murr.	Johann Andreas Murray.
Nees.	Christian Gottfried Nees von Esenbeck.
Nutt.	Thomas Nuttall.
Pall.	Peter Simon Pallas.
Parl.	Filippo Parlatore.
Pers.	Christian Hendrik Persoon.
Planch.	Jules Emile Planchon.
Poir.	Jean Louis Marie Poiret.
Poll.	Johann Adam Pollich.
R. & S.	J. J. Roemer and August Schultes.
Raf.	C. S. Rafinesque-Schmaltz.
R. Br.	Robert Brown.
Reich., Reichenb.	H. G. L. Reichenbach.
Rich., Richards.	John Richardson.
Roem.	M. J. Roemer.
Rostk.	F. W. G. Rostkovius.
Rottb.	Christen Fries Rottboell.
Rupr.	Franz J. Ruprecht.
Rydb.	Per Axel Rydberg.
Salisb.	Richard Anthony Salisbury.
Sarg.	Charles Sprague Sargent.
Sart.	Henry P. Sartwell.
Schkur.	Christian Schkuhr.
Schleich.	J. C. Schleicher.
Schleid.	Matthias Jacob Schleiden.
Schrad.	Heinrich Adolph Schrader.
Schreb.	Johann D. C. von Schreber.
Schwein.	Lewis David de Schweinitz.
Scop.	Johann Anton Scopoli.
Scribn.	Frank Lamson-Scribner.
Shuttlw.	Robert Shuttleworth.
Sibth.	John Sibthorp.
Sm.	James Edward Smith.
Spreng.	Kurt Sprengel.
Steud.	Ernst Gottlieb Steudel.
Sud., Sudw.	Sudworth.
Sulliv.	William Starling Sullivant.
Sw.	Olaf Swartz.
T. & G.	John Torrey and Asa Gray.
Thunb.	Carl Pehr Thunberg.
Torr.	John Torrey.
Tourn.	Joseph Pitton de Tournefort.
Trel.	William Trelease.
Trev.	Christian Ludolf Treviranus.
Trin.	Karl Bernhard Trinius.
Tuckerm.	Edward Tuckerman.
Underw.	Lucian Marcus Underwood.
Vent.	Etienne Pierre Ventenat.
Vill.	Dominique Villars.
Wahlenb.	Georg Wahlenberg.
Wallr.	K. F. W. Wallroth.
Walp.	Wilhelm Gerhard Walpers.
Walt.	Thomas Walter.
Wang.	F. A. J. von Wangenheim.
Wats.	Sereno Watson.
Wed.	H. A. Weddell.
Willd.	Carl Ludwig Willdenow.
With.	William Withering.



THE CHICAGO AREA

GENERAL INTRODUCTION TO THE FLORA

SOME thirty years have passed since the Flora of the Chicago Area was published and in those years a number of forces have been at work, which by their combined agency have largely rendered the printed record uncertain, incomplete, or wholly at variance with the conditions as they exist today.

A more extended knowledge of the physiographic features brought about by the publications of Leverett and others has awakened a far stronger realization of the dependence of plants upon the historical sequence that, working through long periods of time, has carved upon the face of our Mother Earth the present peculiarities of the areal surface. The modern interpretations of the ecologist have caused a very general interest in the distribution of plants and the complex causes of their choice of habitat, inexplicable by the wisdom of the ancients, have often had an explanation that was clear and comprehensive.

Many facts of relationship have been discovered in these thirty years, many new and better arrangements of groups, large and small, more in accord with the exact demands of scientific accuracy, have been worked out. New terms have been invented and new nomenclature has, in a large degree, replaced the old.

A thorough understanding of the physiography of the regions adjacent to Chicago has somewhat extended our borders, although in the main, they remain largely as in the former work. The most noteworthy divergence has been northward where the limits are placed in the moorland north of Waukegan. Justification for these extensions of limits, great or small, is to be had in the following points:—(1) A natural exterior limit is the Valparaiso moraine which embraces on its lakeward side most of Lake Chicago, and the drainage slope adjacent to it. This morainal crest coincides largely with the limits chosen southeast and northwest. There is

some overstepping along the west boundary by reason of nearness to the Area center and the north shore limit is admittedly arbitrary. (2) A second consideration of great weight is that great extensions of suburban and interurban lines of communication have rendered it a simple matter in time and cost to reach the most extreme locality of the area thus marked out. It seems almost a necessity to include all regions that can be explored in a half-day's outing, this area thus becoming the botanical suburbs of Chicago. (3) A third feature of no small weight has been the tremendous extension of the city countrywise, the extinction of many rich plant localities of two decades ago by this encroachment of urban improvements and the consequent compulsion of seeking farther afield for botanical specimens of interest or rarity.

The area as thus extended may be compared to a distorted ellipse, the center being the mouth of the Chicago River, the transverse axis about forty-five miles in length, the vertices being the Waukegan Moor and Mt. Tom respectively. The conjugate axis, with a length of about thirty-five miles from the river mouth to a point midway between Naperville and Aurora, takes in the full width of the Valparaiso moraine excluding the immediate bluffs and valley of the Fox River. Probably three-fourths of this area was occupied by Lake Chicago and its tributary drainage slope.

As thus limited, there are found *six* well-marked floral areas largely coterminous, with marked physiographic features of controlling influence. These are (1) The Waukegan Sands and Marshes, (2) The North Shore and Adjacent Regions, (3) The Des Plaines River Valley and Drainage Basin, (4) The Western Morainal Ridge and Slopes, (5) The Southern Morainal Area, (6) The Southeastern Dunes, Sands, and Flats.

Each of these very interesting and natural areas is considered in separate papers in this work, details of surface topography and other determining factors being accorded their due proportion of influence. Those who have undertaken these general reviews of the floral areas, while working separately, have woven a fabric that is continuous in pattern, and with the warp and woof of verified

observation have given to the plant loving citizens a product that ought to be a daily necessity in the future work of collection and exploration in the region under discussion.

In the Annotated List that makes up the body of *The Flora* are to be found all plants reported to the date of this introduction, April, 1926. It has seemed best for purposes of record and preservation to give place to all plants that have been found, irrespective of whether these finds were unique or of common occurrence. A number, however, are certainly not now extant in our area and are listed in the Addenda. It is certain that the numbers of this section will gradually increase under the destroying influence of urban activities. For the present, however, it is hoped and believed that there is here presented a nearly perfect record of the condition that now exists.

The basic area of *The Flora* being the drainage basin and ancient floor of Glacial Lake Chicago, a concise review of our knowledge concerning this body of water is necessary for a complete understanding of the topographic features and the consequent distribution of plant life. When the Michigan Lobe of the Late Wisconsin Glacier was at its greatest extent, its front occupied a great curve that is now marked by the Valparaiso moraine, extending along the southern end of the present Lake Michigan from southwest Michigan to northeast Illinois, distant from ten to twenty miles from its shore.

As the ice cap receded northward a deep basin was exposed that was filled with the waters of the melting glacier, forming a lake now known as Glacial Lake Chicago. This lake had several shore lines, the highest, some fifty feet above Lake Michigan (mean level 581 feet), being known as the Glenwood Beach, from the village of that name situated upon it. The dammed-up waters found an outlet southwestward over a possible low portion of the moraine into what is now the lower Des Plaines River Valley, where a channel a mile or more in width was carved through former glacial deposits into the underlying Niagara limestone, leaving in fact the only extensive rock record found in our area.

Thus the Lake level was gradually lowered until a long stationary period caused a second marked beach formation, the

Calumet, having an elevation above datum of thirty-five feet. Between this beach and the Glenwood there was an intervening space varying from practically nothing to a couple of miles or more of flat lands as is well shown in the town of Jefferson east of Dunning.

A second period of marked subsidence followed by a stationary stage produced the Tolleston Beach (20 feet above Lake Michigan), which as a rule was far separated from the Calumet Beach by a wide flat so extensive that a large part of the present city of Chicago is accommodated upon it. Between this Beach and the present shore line are several imperfect beach formations not distinct enough over large extent for special designation.

The beaches when well marked are very characteristic linear abrupt elevations, the steep slope being an eastern one in most cases, commonly bearing numerous groves of bur oaks, with occasional other types of forest trees. These ridges are variously made up of sands, gravels, and mixtures of all sorts. They often branch and occasionally disappear or flatten and broaden. Now and then small dune formations are found. In many places they have been chosen for city streets or country roads. They are very pronounced at their northern termination at Winnetka, and equally so in many other localities.

The flat lands between the beaches are usually glacial clays, overlaid with loam, sand or peaty formations, and often wet and marsh-like by reason of imperfect drainage. They constitute the large area of "original prairie" adjacent to Chicago, possessing at the present time probably more of this variety of topography than exists elsewhere in Illinois.

Between the Tolleston Beach and Lake Michigan the soil is almost everywhere sand or gravel, with many parallel ridges alternating with peat depressions. This was originally an oak forest, mostly black oaks, though much has been exterminated in the growth of the city and suburbs. As one passes southward and eastward the ridges assume more and more dune-like character, until the true dunes of Indiana are reached.

Above the general level of Lake Chicago two or three elevations of note were present: the large area known as Mount Forest Island

at the southwest, between the north and south channels of outflow into the Des Plaines; Blue Island, north of the suburb of that name, also forest covered and with well marked dunes along its western front; and Stony Island, near South Chicago, a lower elevation with a planed and grooved rock surface but thinly covered with earth. Two other areas of shallow rock are at Halsted and 45th, and on Western Avenue, near Grand, and each had originally characteristic floras, now exterminated by the city's growth.

Meandering through this lake floor were and are two water courses, one a live stream, the North Branch of the Chicago River and the other a remnant of flood days gone by, the Ogden Ditch, partly artificial but largely the work of the Des Plaines River overflows. It shows markedly the low elevation or divide between the Mississippi and St. Lawrence systems at this point and bears mute testimony of the ancient days when the waters of Lake Michigan were in fact a part of the former, and a mighty stream flowed on either side of Mount Forest Island, out of the southwest angle of Lake Chicago, which later united and carved in part the present great valley of the Illinois, comparable with that of the upper Mississippi.

As this flood broke through the height of land near Summit, Sag, and beyond, natural rock cliffs and erosion canyons in miniature were finally produced by the wearing waters, so that here today on a limited scale are the only natural rock outcrops of our area with their peculiar flora, living proofs of the effect of topography upon plant life and distribution.

The Area, as may be surmised from what has preceded, is rich in marsh, prairie, and sand forms, but very scanty representations of rock species are to be found. Owing to its being the scene of great glacial activity in the forefront of a great ice lake, a remarkable feature is the commingling of northern and southern forms about the head of Lake Michigan, giving rise by all these agencies to one of the most extensive and varied floras of temperate regions.

In conclusion it is particularly appropriate, in a work giving the exact localities of growth of so many rare and beautiful plants,

that most urgent and emphatic stress be placed upon the imperative necessity of a conservation of this flora. In the bygone days and extending too certainly into the present no thought was taken of any possible harm that might come to plant life by indiscriminate and immoderate picking of bouquets and collections of plants for class study or herbarium purposes. The supply was supposed to be inexhaustible and the gathering justified as a necessity for botanical education or record of species for future use in schools and colleges.

And so the work of demolition went on. Every botanist had a can great or small that carried home from the field tens and hundreds of specimens. In truth much use was made of this material and many an ardent lover of flowers today was first prompted to plant study by this expedient. But what can be said of the ever increasing horde of picnickers who, descending upon the fields and woods in spring, summer, and fall, bore as a trophy upon returning to their city homes, a great bunch of phlox, trilliums, geraniums, or what not. It was ostensibly, and to that extent praiseworthy, to gladden the eyes and hearts of the stay-at-homes. The folly of the proceeding, however, was in the fact that not one bouquet in a hundred ever reached its intended destination, for, wilting in the heated hand of the gatherer, and aided by the hot air of sun and wind, the pretty things were soon thrown away, littering the march of the merry-makers as ruins mark the progress of victorious armies.

The time is come, therefore, to call a halt on these methods, however much of good they may seem to have on cursory examination, and to oppose with every reasonable weapon of logic and persuasion at our command, this wholesale gathering of flowers, that leads in most cases to no end whatever but the immediate discarding of the gathered beauties and ultimate depletion or extermination of the flowers. To this consummation, the following suggestions are made for the consideration of all flower lovers:

First—A publicity campaign, through the medium of clubs, societies, schools, and periodicals, acquainting all citizens of the rapidly approaching danger and inviting co-operation in every possible manner.

Second—The discouragement in practical ways[1] of the displaying for sale by our florists of all wild flowers, fruits, ferns, and foliage. The writer met a youth in the fall, a few years ago, who told him that he, the youth, had thus far gathered something like a ton of the northern holly berries for Chicago florists. The young man spent his entire time, had made several hundred dollars, and on the day in question had a great pack of holly twigs, with their brilliant scarlet fruits, that must have weighed sixty pounds. He must have utterly despoiled from sixty to one hundred shrubs to have obtained this store. At another time a man was encountered with eight hundred and eighty-five showy lady's slipper stalks and blooms. A third confessed to having gathered in one day fourteen hundred and fifty white water lily blooms.

[1]Since this paragraph was originally written the State of Illinois has enacted and has spread upon its Statutes the following Law pertaining to the conservation of several of our rarest and most beautiful wild flowers. The section is quoted in its entirety for the guidance of all flower lovers and as a warning to all flower gatherers.

AN ACT FOR THE CONSERVATION OF CERTAIN WILD PLANTS IN THE STATE OF ILLINOIS. Approved June 21, 1923 —In force July 1, 1923.

Section 1. *Be it enacted by the people of the State of Illinois, represented in the General Assembly:* That any person, firm or corporation who shall, within the State of Illinois, knowingly buy, sell, offer, or expose for sale any bloodroot (Sanguinaria canadensis), lady's slipper (Cypripedium parviflorum, and Cypripedium hirsutum), columbine (Aquilegia canadensis), trillium (Trillium grandiflorum, and Trillium sessile), lotus (Nelumbo lutea) or gentian (Gentiana crinita and Gentiana Andrewsii), or any part thereof, dug, pulled up or gathered from any public or private land, unless in the case of private land the owner or person lawfully occupying such land gives his consent in writing thereto, shall be deemed guilty of misdemeanor, and shall be punished by a fine of not less than $10.00 nor more than $100.00 and costs.

Section 2. All prosecutions under this act shall be commenced within six months from the time such offence was committed and not afterwards.

THE WILD FLOWER PRESERVATION SOCIETY

(Illinois Chapter)

Do you know the trillium, lady's slipper, gentian, bloodroot, columbine, and lotus?
Do not pick them.
Leave them to beautify the earth.
Illinois is losing the loveliest of her native flowers.
Love your state and preserve her beauty.
Picking a flower destroys its seeds.
Pulling stems disturbs roots.
Breaking branches from a tree cripples it.
Be a lover, be an enjoyer, be a protector of flowers.
Let them cover the earth and give joy to all of us.
You can help by joining the Wild Flower Preservation Society.
Write for membership.
Invite your friends to become members.

Third—The revision of flower studies in our High Schools and Colleges, so that flowers and flower families may be comprehended through the medium of samples and not by wholesale job lots, the finishing touch to the floral education being given in the field in the presence of the growing plants.

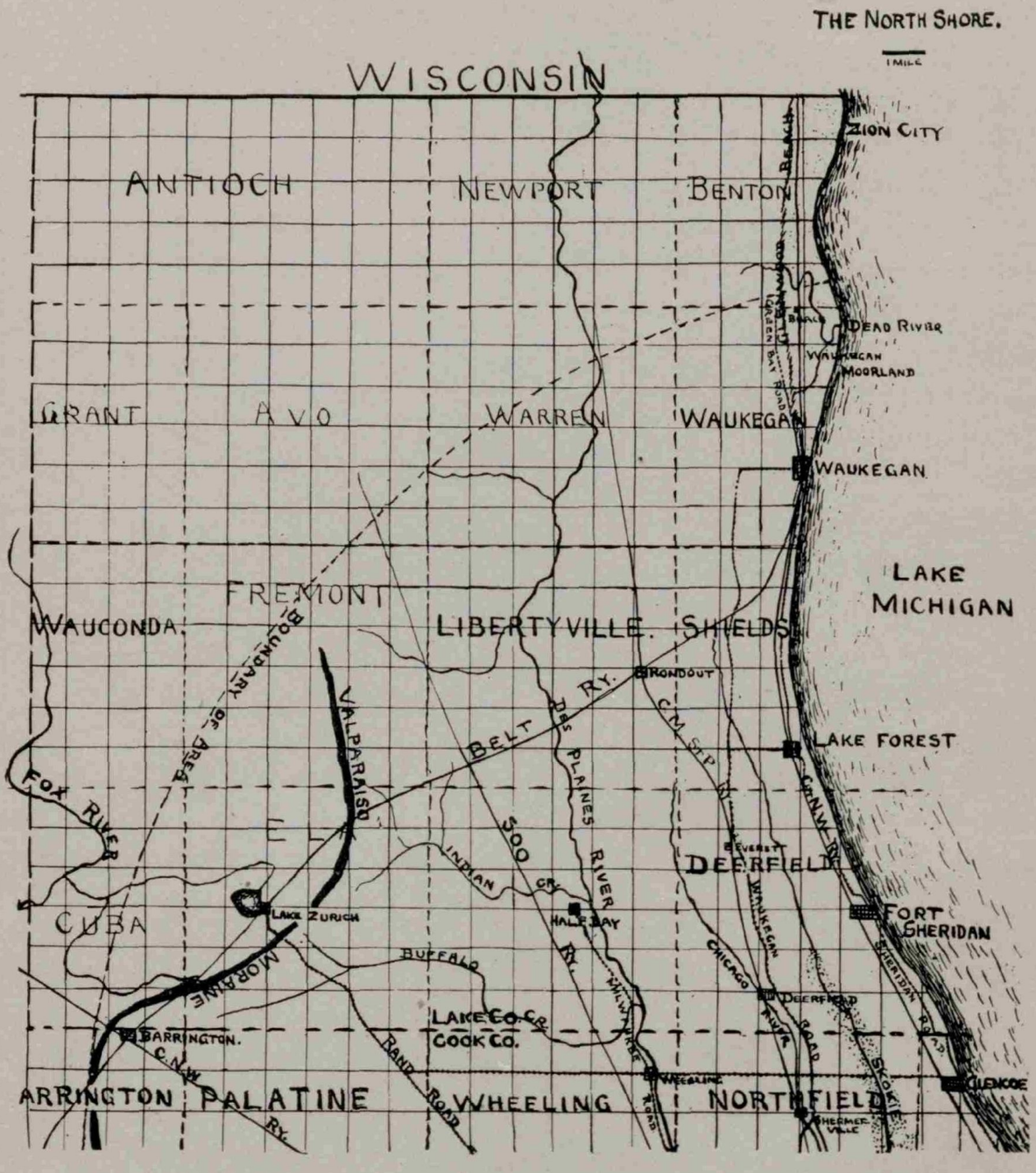
Fourth—The taking up of the problem by every teacher who has aught to do with nature study work and the solution by instruction, pledges for pupil and parents, and all other approved means, so that the oncoming generation may grow up conservationists instead of vandals.

Fifth—A very favorable and powerful aid to conservation of our wild life, plant and animal, has lately come into existence, in the Forest Preserve District of Cook County, which is acquiring title as fast as possible to many thousands of acres of what is left of our natural woodland and stream borders. This bids fair to become the greatest single force ever put into action to stay the destruction of our wild flowers, trees, and bird life. But it will be vastly crippled in its effectiveness unless the preceding educational propaganda is carried out to the fullest possible degree.

The author urges upon every user of *The Flora* that he ever keep in mind the perishable nature of the wild folk he studies and that, in so far as he has power and influence, he exert both to the conservation of all of our natural heritage that remains to us, never needlessly maiming nor destroying one of our floral or arboreal citizens, but ever protecting them with zealous care from ruthless hands or ignorant caprice.

FLORAL REGION No. I

The Waukegan Moorlands



THE WAUKEGAN MOORLAND AND NORTH SHORE

THE WAUKEGAN MOORLANDS

LYING north of Waukegan, and extending north beyond the limits of our area, is an extensive region of nearly uniform topography consisting of low, sandy ridges with a general north and south trend, separated by wider or narrower belts of marsh or slough that are but slightly elevated above the waters of Lake Michigan. The ridges have an elevation above the adjacent marsh varying from a few feet, in those parts most distant from the present lake shore, to twenty-five or thirty feet in the more recent sand formations immediately contiguous to the lake. The width of the region from the abrupt Glenwood Beach to the lake varies from one-half to one mile.

Near the limiting Glenwood Beach are extensive marshes, usually with much water, even in the driest summers. As the lake is approached the marsh strips are narrower, the ridges become more pronounced, and the last one-fourth to three-eighths mile is dry, sandy, and in places dune-like; about two hundred feet of recent lake beach terminates the area eastward. The region is imperfectly drained by Dead River, the lower course of which, for one mile, is a deep slough having a width of forty feet or more and lying in a depression parallel to and one-fourth mile from the present shore. The mouth, often choked by sand, discharges a small but rather constant flow of water, except after long continued east winds, which for a time effectually bar the entrance to the lake.

In the spring and early summer the moor is practically impassable from west to east in the outer or western half, owing to the depth of water in the marshes and the miry nature of the bottom soil. At such times the collector must needs travel the ridges, finding an occasional cross-shoal of sand that will enable him to work his uncertain way crosswise. In late summer it is possible with wading boots to traverse most of the area except the river and one or two small sloughs connected with it.

Historically, the region was a portion of Lake Chicago at the time of the greatest elevation of that body of water, the Glenwood



WOODRUFF

THE MOUTH OF DEAD RIVER

Beach, the west margin of the moor, being the ancient shore line. The ridges represent the combined result of wave action and subsequent modification by the wind, the intervening marshes being but slightly above the present Lake Michigan level. The long-continued growth of the marsh vegetation, with the accumulation of vegetable debris, is a cause of their slow but steady departure from the original width.

Most of the ridges are more or less covered with various species of trees in a rather scattered formation, the black and bur oak being dominant on higher ground, and willow, cottonwood, and ash prevailing along the marsh regions. A few tamarack still persist and in the region south of the outlet of Dead River, occupying a large area of the dry elevation just west of the shore dune, is a veritable miniature forest of conifers, of many species, the result of wholesale seed sowing some sixty years ago by Mr. Douglass. To the unobservant or the poorly informed observer, this growth has every appearance of being natural, and in fact is so for all practical purposes, and if no disturbance occurs in the next generation, the evidence will all point to Nature instead of Art as the causation of the peculiar coniferous flora.

The moor was doubtless a much more extended region in times long past, as indicated by many of the sand ridges being abruptly worn away at their northern and lake ends. This is due to the fact that the present shore does not lie parallel to the ridges, but cuts each at an angle. This wearing away of the ridges may furnish a large amount of sand for dune construction.

Botanically, the region is easily divisible on a topographic basis into *eight* distinct floral zones, as follows:—(1) the deep water of Dead River, and a few larger water bodies; (2) the permanent marshes; (3) the junction of ridge and marsh; (4) the low moist ridges; (5) the dry ridges; (6) the lake dunes and sand knolls; (7) the Glenwood basal strip; (8) the Glenwood Beach proper. In a general way the whole region is more or less a duplication of the conditions existing in the Dune Region of Lake County, Indiana, particularly that portion adjacent to Clarke, Pine, and Clarke Junction. The Glenwood element is, however, wanting,

but a similar topography may be found on the steep limiting bluff of the Grand Calumet near Millers.

The soil of the drier portions is largely sand; of the moister portion much humus is intermingled with muck and peat in the marshes resting on a glacial clay formation. The Glenwood Beach is of clay, often saturated, with gravel and sand pockets, and a loam surface soil of some thickness. Many springs have



DUNE AND SWALE, WAUKEGAN MOOR

their origin along the beach slopes or in the erosion ravines, that cut into its otherwise very regular face. These are invariably factors, probably thermal as much as aqueous, in plant distribution.

Like all regions of varying topographic conditions that subject plants to extremes of water and soil environment, the moor is a "final resort" for many species that have been able to accommodate themselves to the more or less unfavorable soil and water factors, and so here make their last stand before extinction, natural or artificial.

Easy of access, by the old railway grade from Beach Station or by the road nearer Waukegan, here is afforded a very favorable opportunity for the study of associations and formations of plants. Of the latter there are well marked, in different parts of the region:—(a) the black oak forest; (b) the swamp meadow; (c) the reed swamp; and (d) the meadow. Of the associations there may be studied without difficulty the following:—(a) the water lily-pondweed (Nymphaea-Potamogeton); (b) the knot-weed (Polygonum); (c) the rush-cat-tail (Scirpus-Typha); (d) the phlox-ragwort-painted cup (Phlox-Senecio-Castilleja); (e) the prickly pear cactus (Opuntia); the bearberry (Arctostaphylos) and others. The marsh associations, as a rule, are much more marked than are those of drier lands, the determining factors in the latter being so much more numerous and complex.

Attention may now be given to some of the more interesting plant features that a careful study of the moor will disclose. As might well be expected, marsh forms are very much in evidence, and appear in great numbers. A few may be named that appeal more certainly to the eye, as well as some of possibly greater interest if less conspicuous. Marsh grasses, blue-joint (Calamagrostis), reed grass (Phragmites), cord grass (Spartina), early bunch grass (Sphenopholis),—particularly the first two, are everywhere. The cat-tails (Typha), and an apparent hybrid, form great zones or masses; a large number of sedges (Carices) assist in the swamp meadow and meadow formations. Several duckmeats (Lemna) and Wolffia columbiana are abundant. Arrow-leaf (Sagittaria variabilis), justifying its specific name, associates with the bulrush in wide zones. Sweet flag (Acorus) is everywhere in suitable locations. The rushes (Junci) are very numerous along the marsh borders, being represented by some ten species. The genus Salix or willow has many swamp or marsh loving species, the most noteworthy being silky willow (S. serissima), myrtle willow (S. pedicellaris), shining willow (S. lucida), and hoary willow (S. candida). It is evident to anyone who has studied willows, especially where several species are associated, that numerous hybrid forms exist, that cannot be placed by the manuals. Hybrids of the hoary (S. candida),



WOODRUFF

THE WAUKEGAN MOORLAND

DEAD RIVER AT THE RIGHT

beaked (S. rostrata), and silky (S. sericea) willows in almost inextricable confusion, have been noted.

Water knotweed (Polygonum hydropiperoides) grows in densely congregated masses that dominate large areas; with it are the water hemlocks (Cicuta, particularly C. bulbifera, and Sium). This knotweed (Polygonum) furnishes in many places a chief food for wild ducks and other water fowl, their crops often being filled exclusively with the seeds.

Yellow water crowfoot (Ranunculus delphinifolius) is common in local communities, but is not general. Its relative, the white water crowfoot (R. aquatilis) is found in the deeper waters of the Dead River. The peculiar cursed crowfoot (R. sceleratus) appears now and then as a solitary example of strange aspect. The first crowfoot named above is showy when en masse, and like many other water plants, may propagate vegetatively by stem buds, breaking away from the plant and rooting.

The most striking plants are found in the meadow formation where the ridge land is but slightly elevated above the adjacent marsh lands on either side. These meadow strips are from two to ten rods in width and in June and July are almost a solid and glorious mass of variegated colors, due to the profusion of showy plants in bloom. In order of season we may name meadow parsnip (Zizia aurea), cynthia (Krigia amplexicaulis), betony (Pedicularis canadensis) and various violets, the common blue, arrow leaved, bog, and larkspur (Viola papilionacea, sagittata, nephrophylla, pedatifida, cucullata). A peculiar form nearly white, of uncertain determination but possibly an arrow leaved x hooded (sagittata x cucullata) hybrid is abundant and very beautiful. Star grass (Hypoxis) and blue-eyed grasses (Sisyrinchium), painted cup (Castilleja), shooting star (Dodecatheon), red phlox (Phlox pilosa), violet broom rape (Orobanche uniflora) of deep lavender hue, prairie phlox (Phlox glaberrima), wild onion (Allium cernuum), and others delight the eye and thrive often in soil of considerable moisture, but do so because of the good drainage of the underlying sand. Later in the season fair crops of hay are produced, but all untouched portions are gay with brown-eyed Susans (Rudbeckia), goldenrods (Solidago), asters, (Aster),

gentians (Gentiana crinita, procera, andrewsii), and grass of Parnassus (Parnassia).

The extensions (girdles) of the same sort of soil but with a greater water content found along the immediate margins of nearly all the marsh strips and separating them from the dry sand ridges, are the chosen homes of a number of rare orchids:—lady's slippers, large yellow, small yellow, and white (Cypripedium parviflorum, parviflorum pubescens, and candidum); rein orchis of three species (Habenaria hyperborea, dilatata media, clavellata); pink pogonia (Pogonia ophioglossoides); beautiful-beard orchis (Calopogon pulchellus); ladies' tresses (Spiranthes cernua); and green twayblade (Liparis loeselii). This entire orchid list is found in similar topographic surroundings in the Dunes of Indiana and illustrates well the influence of topography, soil, and water upon plant distribution.

A few notable plants may be named, characteristic of the sand ridges of moderate elevation. Asparagus is very abundant, thoroughly naturalized, and exceedingly vigorous. The writer has gathered many a good "mess." Coreopsis lanceolata and especially the variety villosa, are rather common. The ovate-leaved Jersey tea (Ceanothus) is present and the yellow paint brush (Castilleja sessiliflora) is very abundant on a few mid-located ridges. Lupine (Lupinus) forms great masses and shows three color forms, the ordinary, a pure white, and one with the purple replaced by a violet-pink. Choke cherry (Prunus virginiana) is occasional, but reaches its best on the dune ridges. Pinweeds (Lechea) are scattered here and there; bird-foot violet (Viola pedata) is everywhere; butterfly weeds, the orange and yellow forms (Asclepias tuberosa, forma aurantiaca, and forma aurea) are here, the latter very striking and very rare; three horsemints (Monarda fistulosa, mollis and punctata); numerous composites, —blazing star (Liatris), goldenrods (Solidago), asters (Aster), and sunflowers (Helianthus).

On the higher and drier ridges of purer sand nearer the lake grow prickly pear (Opuntia), bearberry (Arctostaphylos), red cedar (Juniperus virginiana), dwarf juniper (J. communis depressa), and in magnificent profusion the trailing juniper (J. horizontalis).

This last named forms great carpets of twenty to sixty feet in diameter, and is one of the finest evergreens I have ever seen. The pine forest mentioned previously occupies a portion of this topographic formation, just south of the outlet of Dead River. The pines are of many species, white, Austrian, Scotch, Table Mt., pitch (Pinus strobus, laricio, sylvestris, pungens, rigida) and are seemingly perfectly naturalized. Mr. Douglass (the story goes)



DEAD RIVER, WAUKEGAN—THE PINE FOREST IN THE DISTANCE

traversed the area on horseback, carrying a bag of mixed pine seeds and threw them into the wind, thus scattering the seed far and wide. This was some sixty years ago, and today some parts are covered with most vigorous forest growth. The Austrian pine has done the best, though numerous specimens of all the species are thriving.

On the lake margin of the sand ridges small irregular dunes are found, generally capped with false Solomon's seal (Smilacina stellata), marram grass (Ammophila) or sand binder grass (Calamovilfa), herbaceous forms; or when woody plants appear, sweet

sumac (Rhus canadensis), dune willow (Salix syrticola), sand cherry (Prunus pumila), wild grape (Vitis vulpina), Virginia creeper (Psedera), choke cherry (Prunus virginiana), hop tree (Ptelea trifoliata), box elder (Acer negundo), cottonwood (Populus deltoides), and balm of Gilead (Populus candicans). This latter species is common and extends throughout the shore dunes the whole extent of the Chicago Area, and appears to be a genuine native.

The wave and wind swept recent beach in its higher and less wave exposed portion has a scanty growth of love grass (Eragrostis pilosa), Cyperus, sea rocket (Cakile edentula), bug-seed (Corispermum), tumbleweed (Cycloloma), and Russian thistle (Salsola kali tenuifolia).

The Glenwood Beach and generally its moist, springy base, is rich in a very much mixed flora, justified by the great diversity of soils, moisture, exposure, and drainage. A few of the more important species are here enumerated, with a few notes on some remarkable examples of plant distribution, somewhat outside the area limited by the Glenwood Beach.

The moist slope is rich in shade-loving sedges and grasses. Mention may be made of species of manna grass (Leersia, Glyceria) and wild rye (Elymus); sedges (Carex lupulina, lupuliformis, hystricina); wild garlic (Allium canadense) and wild leek (A. tricoccum); Solomon's seal (Polygonatum commutatum); greenbriers (Smilax hispida, ecirrhata, and herbacea); and nearly all the willows (Salix), except the true marsh S. candida and S. pedicellaris and the dune S. syrticola; some ten species in all. Very fine examples of balsam poplar (Populus balsamifera) are occasionally seen. The canoe birch (Betula alba papyrifera) is common, also, bloodroot (Sanguinaria), Hepatica, wild ginger (Asarum reflexum), Anemone canadensis, blackberry (Rubus allegheniensis), cranes bill (Geranium maculatum), jewel weeds (Impatiens biflora and palida), the hairy-wood, common blue, and two white violets (Viola sororia, papilionacea, blanda, and pallens), marsh betony (Pedicularis lanceolata), red honeysuckle (Lonicera dioica), elder (Sambucus racemosa), golden-rods (Solidago), and asters (Aster).

Just west of the beach crest are two large areas, one of beard's tongue (Pentstemon digitalis), the other of orange hawkweed

(Hieracium aurantiacum),—the latter very numerous and brilliant, but far removed from the recorded range. Evidently it has been established for a long time, as some acres of open woodland are now overrun. Tartarian honeysuckle (Lonicera tartarica) is common in the same wood. Mountain ash (Pyrus americana) is occasional. The thought is suggested that the old-time nursery of Mr. Douglass, which was located near here, may have been a center of distribution for some of the above species.

Summarizing, we have the following points of interest:

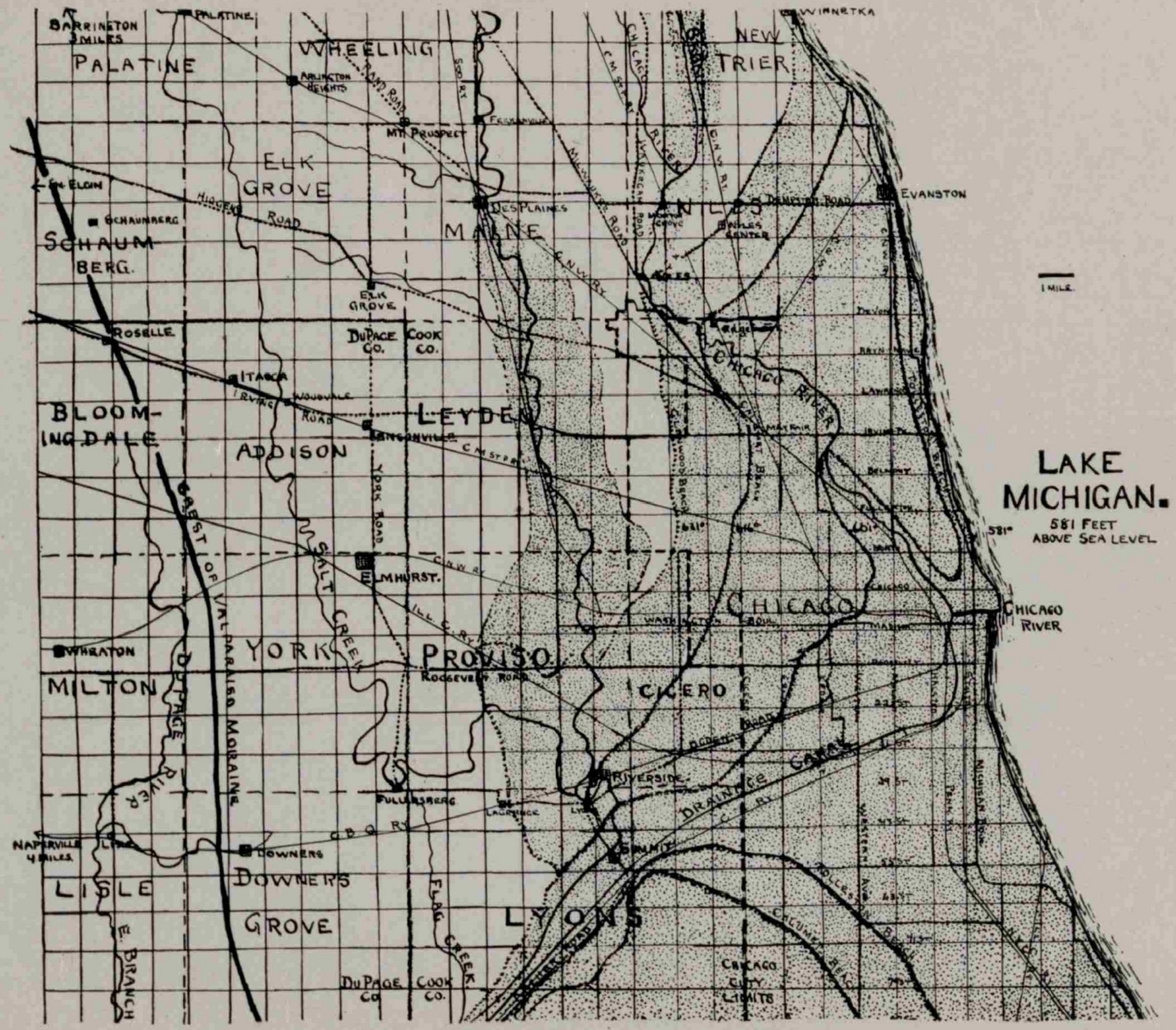
1. Historically it is a part of the ancient Lake Chicago bed that is the center of all the region with which *The Flora* treats.
2. Topographically and botanically it is quite similar to the Indiana dune region.
3. It is a great flower garden from June to September, well representing several formations and associations.
4. It contains a well-marked artificial coniferous forest of most natural aspect.
5. It contains a few very rare or extra-limital species.
6. The marked effect of sufficient or excessive water supply is illustrated.
7. True xerophytic conditions are found in places.
8. It contains over *500* enumerated species, found by the author, Umbach, Gates, and others.
9. The conserving effect is seen of unfavorable conditions (excess of water, poor soil, etc.) on certain disappearing species.
10. Every stage is found, from deep water to dune, spread out in small compass for easy study and for the working out of the genetic sequence.

NOTE: Since the above was written a large portion of the southern end of the moor has been taken over for manufacturing purposes, the land graded, ridges, marshes, and sloughs destroyed, and plants by the wholesale exterminated. This commercial invasion has paused for the present at least, some two miles to the south of Dead River outlet. Furthermore, a very large tract of land east and south-east of Beach Station on the C. & N. W. Ry. is now a dairy pasture, and the wonderful meadow flora of the pastured area is exterminated. Gentians that existed by the thousands ten years ago are with difficulty found by the dozen or even less. It would appear that this favored plant refuge is soon to be a memory. A further rumor is that the whole tract is to be made into a model suburban residence area. This is so alarming that determined effort is being made by plant lovers, in Waukegan and elsewhere, to have the moorland set aside as a plant and bird refuge. The success of this undertaking is not as yet assured.

Thus, one by one, the fine plant havens-of-refuge are "yielding up the ghost" to ruthless, if necessary, urban extensions of activity. Doubtless, destruction awaits much of our native flora that is unfortunately within commuting distance of Chicago, a fate to be greatly deplored but not to be prevented.

FLORAL REGION No. II

The North Shore and Northern Region



A PORTION OF THE NORTH SHORE AND THE DES PLAINES RIVER DRAINAGE BASIN

THE NORTH SHORE AND NORTHERN REGION

THAT portion of the area of *The Flora* lying northwest and north of the city of Chicago may be designated by the above combination title, as a short and convenient expression to include the entire region from Chicago to the Waukegan district and northwesterly toward Barrington, and from Lake Michigan to the Chicago River, the Skokie Marsh, and the northern valley of the Des Plaines River on its eastern slope.

A considerable portion of this region lies outside of the Lake Chicago Drainage Basin, that may be considered our logical floristic area, but it is so intimately associated with that area by contiguity, channels of communication, and residence of some of our most indefatigable plant lovers and collectors, that both justice and expediency demand its inclusion in the scope of the work.

In a region as large as this it is to be expected that there will be a great amount of diversity in physiographic features, and such, in fact, is the condition found. All the ordinary forms of surface features exist, except the presence of rock outcrops, and every degree of water content from arid knolls and elevations to marshes, ponds, and even small lakes. As might, therefore, be inferred there is a great variety of plant forms, illustrating well most of the formations and associations of temperate latitudes.

As indicated by the above the area may readily be divided into four natural plant districts or life zones, each possessing special points of interest, producing peculiar vegetable types, and presenting well the influence of soil, moisture, and topographic contour on plant distribution. These sub-areas are:

A. The North Shore Ravine, Woodland and Littoral
B. The Skokie Marshland
C. The Chicago River (upper course)
D. The Lake Flats of Ancient Lake Chicago



THE SHORE BLUFF AT LAKE FOREST

WOODRUFF

While markedly peculiar in many particulars, all possess many floristic features in common. For the sake, however, of a clear understanding each sub-area will be considered separately.

A. The North Shore Ravine, Woodland and Littoral

Beginning well within the city limits, a short while since as far south as Graceland Cemetery but now, in 1926, with more justice, at Rogers Park, this district extends from the lake shore for from two to seven miles inland and continues as a band of much varied topography to the city of Waukegan. For some ten miles of its southern portion it occupies the floor, beaches, and sand and gravel spits of Lake Chicago. Much of the surface of this part is the characteristic flat of the till floor of that lake. From Clark Street an embayment ran north, east of the Rosehill Ridge, well into Rogers Park; west of the latter ridge another much more extensive flat or embayment extended west to the upper or Glenwood Beach and north to the junction of that beach with the present lake shore near Winnetka. This great flat was drained in its lower portion by the Chicago River and in its upper part, north of Peterson Avenue, by an ill-defined drainage channel that extended beyond Evanston and is now the site of the Northern Drainage Channel. In early days a creek emptying into the lake near Diversey Boulevard, took care of the surplus waters east of Clark Street, nearly to the present site of Edgewater. Another marshy channel carried the flood water of the Clark-Rose-Hill embayment into the Chicago River.

All that portion of this southern extension, made up of the higher sand and gravel lands, was originally an oak forest, black and bur predominating, but with a large admixture of white oak, ash, cherry, hickory, and smaller forms, such as plums, crab-apples, and shadberries. Most of this forest has disappeared, except, here and there, a few beggarly remnants along the streets, the unimproved blocks, and occasionally a "saved one" in residence grounds. In the swales and low lying parts were willows in profusion, all of the species growing near Chicago, except the dry land forms. In a broad moist expansion at Devon Avenue and

Broadway, as late as 1917, there grew every species except the sand willow (S. syrticola), and that species abounded one block east on the dune ridge of the lake shore. The sand ridges nearest the lake were, and are yet to a limited extent, clothed with choke cherry, distorted cottonwood, balsam poplar, and the allied balm of Gilead. A group of balsams at Edgewater (1910) were thirty inches in diameter and some seventy feet or more in height. They have long since been destroyed. Beginning somewhere in the neighborhood of Lawrence Avenue, and increasing in abundance northward, there was a remarkable growth of canoe birch, the northern limit being Evanston and the center of luxuriance in Rogers Park. But very few are remaining to date (1926). Specimen trees thirty inches in diameter were frequent and clear growths were common, occupying many square rods. Their disappearance, in large part, is attributed to gas mains and sewers, as well as to extension of building operations.

The marshy flats between the beaches and ridges were largely prairies overgrown with typical prairie forms,—grasses, red phlox, betony, shooting star, star grass, sedges, wild onions (Allium cernuum and A. canadense), marsh saxifrage, the beautiful and fragrant late-blooming orchid ladies' tresses, meadow parsnip, the rare red prairie Geum, violets (V. pedatifida, palmata, and cucullata), sundrops, prairie parsley (Polytaenia), swamp milkweed, puccoon (Lithospermum canescens), beard's tongue (Pentstemon laevigatus), and the red painted cup. Near the Chicago River and extending to Bowmanville and beyond a great forest growth occurred with a still present but sadly decimated remnant at the golf grounds near the latter suburb.

Another center of magnificent forest is the Niles woods two miles west of Evanston and three and one-half miles from Lake Michigan. These two forests occupy very low ground with a rich black loam overlying the glacial clay, and, by reason of numerous low ridges and elevations, considerable variation in surface is obtainable. The elevations are dry and covered with a very fertile mold and the depressions are very wet, particularly in spring, with a soil in which muck abounds. A very dense growth of large and very large cottonwood, white elm, soft maple, white and



MARSHALL HOWE

A WOODLAND PATH, EDGEBROOK FOREST PRESERVE

THE TREES ARE WHITE ASH

black ash, water oak (Q. palustris), post oak (Q. bicolor) bur oak, red oak, butternut, and basswood, is found, with an underbrush, according to moisture content, of plums, blackhaws, elderberry, spicebush, crabapples, shadbush, gooseberries, black currants, bush honeysuckle (Lonicera canadensis), prickly ash, wahoo, Rubus species, and hazel. Some of the larger elms and cottonwoods may be four to six feet in diameter and one hundred feet in height. Moonseed, poison ivy, river grape (Vitis vulpina), and Virginia creeper flourish. In the north margin grew a clump of high-bush cranberry (Viburnum americanum). The herbaceous growth shows, among others, the rare bloodroot, Dutchman's breeches, and squirrel corn, the showy orchis, trilliums (the great flowered, nodding, declined, and red), blue cohosh, the woodland knotweed (Polygonum virginianum), false rue anemone (Isopyrum), the red and white baneberries, a large colony of golden seal (Hydrastis), toothed cress (Arabis dentata), the two yellow, hairy wood, white, and dog-toothed violets, the striking spikenard, ginseng, monstrous specimens of cow parsnip, poke milkweed, and fragrant bear's foot. In grassy openings closed and fringed gentians appear, and sedges (Carices), some of them very rare (C. folliculata, lupulina pedunculata, grisea, Davisii, Shortiana, gracillima, and longirostris) are on every hand.

From Winnetka north the surface topography is the glacial drift, very much eroded by deep and tortuous ravines along the lake front, these ravines being separated from each other by varying widths of elevated and wooded tablelands, the lakeward face being as a rule an abrupt cliff or bluff of erosion clay. As the ravines branch and become more shallow toward the west, depressions, flats, and small swamps and marshes appear, many without surface drainage. Small ponds are frequent. The universal soil is clay with a thin coating of loam and leaf mold. The steep slopes of the ravines present every possible exposure to sun and winter winds. A few of the deeper and longer ravines have permanent brooks at their bottoms; all have spring and early summer water courses, but the summer heat dries up many. The same fate attends most of the ponds of the uplands.

Except for grassy openings where the soil is saturated, and about some of the ponds where considerable marsh lands are found, the entire area is a woodland now largely cleared for dwelling sites. Black oak, Hill's oak (Q. ellipsoidalis), white, red, bur, and post oaks are everywhere in suitable water situations. The scarlet oak is reported by most collectors but, according to Professor Trelease, all such are forms of Q. ellipsoidalis. Aspen and great-toothed poplars, cottonwood, peach willow and pussy willow, shell-bark and bitternut hickories, ironwood, hornbeam, white and slippery elms, black cherry, various hawthorns (Crataegi), and an occasional mountain ash (Pyrus americana) are here. Many colonies of locust seem to be thoroughly at home; one north of Glencoe on the ravine slopes has every appearance of native growth. Red and white ash are common. Red and hard maple are frequent, the hard maple being the type form. Red cedar and white pine are frequent along the county line ravine, and a solitary clump of arbor vitae is found on the bluff near Highland Park. Basswood is common in the ravines. The smaller trees are similar to those farther south. In addition, the alternate and round leaved cornels are common. The shrubbery of special note are common juniper (J. communis), dwarf and prairie willow, prickly gooseberry, witch hazel, smooth sumac, bladdernut, various species of grape (Vitis), huckleberry, red and yellow loniceras, and bush honeysuckle. In the ravine at Fort Sheridan are several fine specimens of beech. The next locality south for this species, except in a ravine at Highland Park, was in the midst of a wood near Edgebrook, which was cut off about 1922, the beech with it. No more are seen until the sand dune region near Mt. Tom, offering a hard problem in distribution.

Only a few herbaceous plants of interest need mention here. The bluffs yield many choice carices. Here are the yellow and showy lady's slippers, the bracted habenaria, early crowfoot, hepatica acutiloba, rue anemone, Aquilegia, bank cress, pale vetch, the five flowered and yellow-white gentian, forget-me-not (Myosotis virginica), the very rare and curious great plantain (Plantago cordata), and many species of cudweed (Antennaria). About the marshes are loose-strife (Ludvigia polycarpa), bristly

crowfoot, cursed crowfoot, and Macoun's Ranunculus. In the ponds the yellow and white water crowfoots are very common, the former covering the entire ponds with sheens of gold. The hill strawberry (Fragaria vesca americana) appears at times in suitable locations. All the ferns of the area are found except the true rock species. The crown and the upper borders of the steep ravines, where unprotected by trees by reason of their exposed positions, are very trying to herbaceous forms and are possessed only by those species capable of withstanding extremes of temperature and moisture. Such unfavorable situations are taken possession of by the five flowered gentian, the antennarias, bastard toad-flax, pennyroyal (Hedeoma hispida), rock rose, robin's plantain, and lichens (Peltigera and Cladonia). Various mosses are abundant also. These forested areas are very favorable for many species of mushrooms.

The ravines running east and west, as they do, offer two extremely dissimilar slopes for plant growth, and no better illustration can be found for the differing distribution of plants caused by varying exposures to light, wind, and moisture, than these same slopes. The immediate bluff fronting the lake is generally very moist in most parts of its eroded clay slope, while here and there are seepage springs and tiny rivulets, so that localized marsh floras are common. Very treacherous places to explore are these same spots, but often affording choice botanical finds. The eastern Buffalo berry (Lepargyrea), with its silvery, scurfy leaves, is abundant; also the marsh betony, fringed gentian, many asters and golden-rods, most of the smaller moisture-loving willows, the ever present cottonwoods, balsam poplars and balm of Gilead, box elders and cornels. The poplar and willow species are wind sown and find the moist clays ideal places for germination. A similar condition, by the way, is furnished artificially by the debris of railroad and canal cuttings, and here again Populus abounds.

The immediate sands of the shore have a few interesting plants. The sand willow occupies the sandy knolls, associated with the beach pea (Lathyrus maritimus). The sand spurge (Euphorbia polygonifolia), tumble weed (Cycloloma), bug-seed,



WOODRUFF

THE CHICAGO RIVER, SHERMERVILLE

and sea-rocket are common where well removed from ordinary wave action. The sea-rocket grows in pure blowout sand and thrives, blooming until the last of October, long after nearly all other plants are dead. The drier portion of the shore will show now and then sand binder grass (Calamovilfa) and the aromatic sumac, and now and then a colony of Russian thistles.

B. The Skokie Marshland

The north branch of the Chicago River forks near Golf; the west branch occupies a depression extending almost north by northwest to Rondout. Due west from Wilmette, some three miles, another depression joins this branch, paralleling it about one mile to the east and extending much farther north to the latitude of Waukegan. This is the Skokie, famous in local history, which in ancient days poured a considerable stream into the Chicago River and in yet more ancient days was a lake, part of the Indian portage between Lake Michigan and the upper Des Plaines River. The most noteworthy feature, however, is the marsh bordering this Skokie stream. It averages a quarter of a mile in width, through the center of which the vegetation-choked waters find a slow run off southward. All of the lower half, at least, was doubtless an embayment of Lake Chicago during the Glenwood stage. To the east is the elevated land some one to two miles in width between the marsh and Lake Michigan and considered in detail in a previous section. To the west a similar narrow elevation separated the lower marsh from the tributary before mentioned and the upper marsh by a wider strip from the Chicago River. Much of the marsh has an elevation of less than six hundred and thirty feet, or fifty feet above Lake Michigan twenty miles away by the drainage route.

The soil of the marsh is muck or peat underlain at a slight depth by the glacial clays and is largely in a saturated condition in the early part of the year, becoming more and more dry up to September first. The waters of the Skokie stream vary from a few inches to from two to four feet in depth in some of the pond-like expansions. At this time (1926) most of the land is ditched and

drained, thus markedly modifying the water content and consequent vegetation. Here and there are wooded elevations or "islands" with very rich vegetable loam surface soil. The marsh borders are of a similar character and are often more or less wooded also.

The Skokie Marsh was (1913) the subject of a paper by Mr. Earl Sherff,[1] and the writer cannot do better than to quote at length from his admirable article.

"General Features of the Marsh Vegetation"

"Upon analysis, the vegetation at Skokie Marsh is found to consist of three rather pronounced formations.[2] Along the course taken by Skokie Stream the plants constitute distinctly a reed swamp formation. Extending along on either side of the reed swamp is a broad level expanse, intermediate between reed swamp and meadow. This may be designated as swamp meadow. At the outer edges of the swamp meadow, in narrow areas that have not been too much disturbed by cultivation, true meadow is commonly present. At certain places, however, there is an abrupt transition from swamp meadow, or even from reed swamp, to forest.

"In the reed swamp the plants belong to five easily recognized associations. Where the stream is deepest, aquatic or amphibious species, such as water milfoils (Myriophyllum humile, M. heterophyllum), yellow water crowfoot (Ranunculus delphinifolius), and pondweeds (Potamogeton zosterifolius?) are common near the center.[3] In the shallower parts the species are supplemented or replaced by water heart's-ease (Polygonum Muhlenbergii, P. hydropiperoides), water speedwell (Veronica Anagallis-aquatica), lake cress (Radicula aquatica), water parsnip (Sium cicutaefolium), bur-reed (Sparganium eurycarpum), great manna grass

[1] Vegetation of Skokie Marsh, Sherff. Bulletin of the Illinois State Laboratory of Natural History.

[2] The words "formation" and "association" are used throughout this paper in the sense accepted by Warming ('09, pp. 140, 144).

[3] The common names and parenthetic marks are inserted by H. S. Pepoon.



WOODRUFF

THE LAKE BLUFFS AT GLENCOE

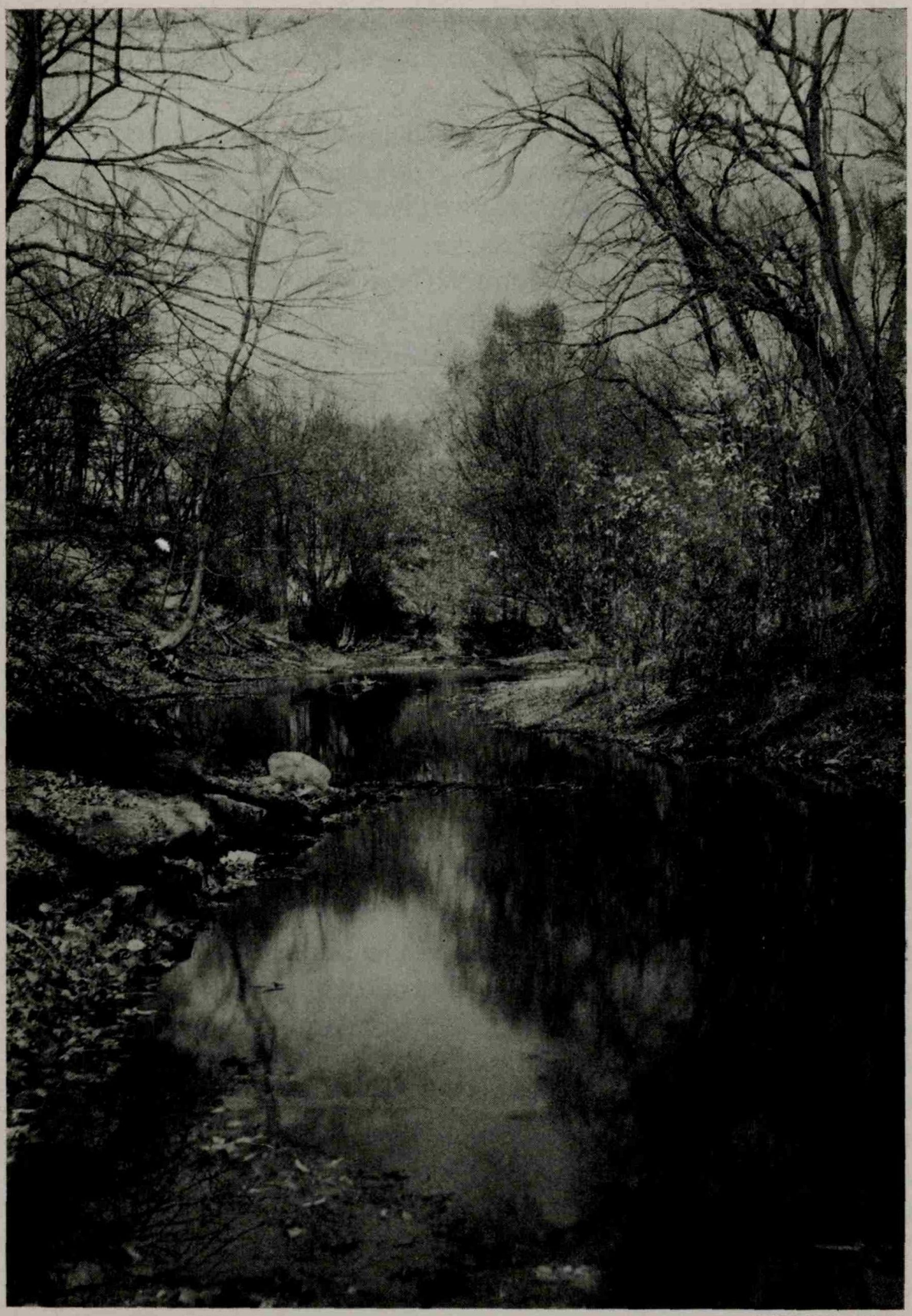
A TYPICAL RAVINE MOUTH

(Glyceria septentrionalis), water plantain (Alisma Plantago-aquatica), stream dock (Rumex verticillatus), and water starworts (Callitriche heterophylla and C. palustris). As Polygonum hydropiperoides and Sium cicutaefolium are among the most abundant stream plants and appear to be dominant, we may classify the plants growing in the stream or upon its bed, except along the margins, as the water parsnip-knotweed (Sium-polygonum) association; or, using Schouw's method of nomenclature, we shall call this the Sio-polygonetum. On either side of the Sio-polygonetum a narrow or sometimes broad girdle of yellow and white waterlilies (Nymphaea advena and Castalia odorata) occurs in many places along the stream. Usually these species are accompanied by species characteristic of the Sio-polygonetum; but the soil and light conditions present in the girdles of Nymphaea and Castalia are peculiar to them and justify their treatment as a separate association, the Nymphaeetum. Landward from the Nymphaeetum are found dense and either intermixed or almost pure growths of cat-tail (Typha latifolia), bur-reed (Sparganium eurycarpum), and certain sedges (Scirpus fluviatilis and S. validus). Scattered to a varying extent among these species are broad arrow head (Sagittaria latifolia) and Sium cicutaefolium. Here and there are a few isolated patches of reed sedge (Dulichium arundinaceum), of water loose-strife (Decodon verticillatus), and of certain other species. This association will be referred to as the sedge-cat-tail (Scirpo-typhetum). Again, in certain parts of the reed swamp, at stations slightly less hydrophytic, common reed-grass (Phragmites communis) is prominent. It forms exceedingly compact, nearly pure, colonies that may reasonably be treated as an association, the reed-grass (Phragmitetum). Finally, we must mention the many large but somewhat scattered patches of blue flag (Iris versicolor) and calamus (Acorus Calamus) occurring in the outer parts of the reed swamp and often extending into the swamp meadow formation. These constitute an association of a very definite stamp, the iris-sweet flag (Irido-acoretum). A general comparison of the reed swamp associations shows that in the Sio-polygonetum and Nymphaeetum where hydrophytism (the growth of water plants) is greatest, the dominant plants are

dicotyledonous. In fact, of the fifteen species found to any considerable extent in these two associations, the ten most abundant (Sium cicutaefolium, Polygonum hydropiperoides, P. Muhlenbergii, Nymphaea advena, Castalia odorata, Rumex verticillatus, Veronica Anagallis-aquatica, Myriophyllum humile, Callitriche palustris and C. heterophylla) are dicotyledons. In the other three associations the most abundant species are chiefly monocotyledons.

"The swamp meadow differs from the reed swamp in being more uniform, owing to greater parallelism between the water-table and the soil surface, and does not admit of logical subdivision into associations. The plants are principally such grasses as blue-joint (Calamagrostis canadensis), manna grass (Glyceria nervata), small reed grass (Phalaris arundinacea), fowl meadow (Poa triflora), pale Eaton grass (Sphenopholis pallens), and bent grass (Agrostis perennans). These are frequently interspersed with various sedges (Carex lupuliformis, C. vesicaria monile, C. riparia, Scirpus atrovirens, S. Eriophorum), etc. The swamp meadow is used by farmers of the district for the production of marsh hay, and many of them customarily burn over the area late in the autumn. Most of the shrubs and young trees are killed in this way and so forest development is hindered. Trees occur only in small groups, consisting chiefly of willow (Salix fragilis, S. nigra, and other species), black and white ash (Fraxinus nigra, F. americana), aspen (Populus tremuloides), and white elm (Ulmus americana). Frequently associated with these are such shrubs as pigeon berry (Cornus stolonifera), button bush (Cephalanthus occidentalis), and elder (Sambucus canadensis).

"Throughout the reed swamp and swamp meadow are many species which, though very abundant, share only to a small extent in giving to the several associations their distinctive appearance. Thus water purslane (Ludvigia palustris), mermaid weed (Proserpinaca palustris), ditch stone-crop (Penthorum sedoides), and narrow-leaved sedge (Stenophyllus capillaris) are low in habit and obscured by taller plants in the shade of which they may thrive. Again marsh aster (Aster Tradescanti), Bolton's aster (Boltonia asteroides), cardinal flower (Lobelia cardinalis), wood sage



MARSHALL HOWE

THE NORTH BRANCH OF THE CHICAGO RIVER, NEAR EDGEBROOK

(Teucrium occidentale) and marsh skull cap (Scutellaria galericulata), while extremely common, are nevertheless conspicuous only during the latter part of the summer. The names of such species are here reserved, so far as possible, for the annotated list of species at the end of this paper.

"The meadow formation, as already stated, is narrow and more or less interrupted. The soil surface slopes mildly upward, away from that of the swamp meadow. The vegetation is much diversified at different places and from month to month during the vegetative season blue grass (Poa pratensis) and red top (Agrostis alba) are the dominant grasses, but oat grass (Danthonia spicata) and dog-tooth grass (Agropyron caninum) are frequent. Scattered among the grasses are sedges (Carex stipata, C. vulpinoidea, C. scoparia, and Eleocharis palustris). In some parts of the meadow hooded and common blue violets (Viola cucullata and V. papilionacea), golden ragworts (Senecio aureus and S. Balsamitae) are conspicuous in May and June, while later such species as Turk's cap lily (Lilium superbum)[1] and black-eyed Susan (Rudbeckia hirta) are the most noticeable.

"The stretches of forest present in many places at the edge of the marsh, while not usually considered as belonging to the marsh, are of interest because of the light that they throw upon the successional development of vegetation with the passing away of marsh conditions. Along the east side of the marsh the ground surface slopes gently upward toward a rather high morainic ridge that roughly parallels the marsh; and as one proceeds toward this ridge, he leaves behind him such woody species as the red and silky cornels (Cornus stolonifera and C. Amomum), button bush, and long leaved willow (Salix longifolia), and passes in turn thickets composed of elder, aspen, and taller species of willow, forest composed largely of swamp white and red oak (Quercus bicolor and Q. rubra), black and white ash, and white elm, finally reaching forest composed of red oak and such upland species as white and Hill's oak (Q. alba, Q. ellipsoidalis),[1] and shag-bark hickory (Carya ovata)."

[1]NOTE—One or two changes have been made in the above paper, in specific names, as L. superbum for L. canadense and Q. ellipsoidalis for Q. coccinea.

C. The Chicago River. Upper Course

A large area of this region, lying adjacent to the Chicago River and to the upper reaches of the Des Plaines River, has been acquired by the Forest Preserve District of Cook County and some two thousand acres of the Skokie are under negotiation to the same end. A locality particularly rich in fine arboreal forms and abounding in choice herbaceous types is contiguous to the junctions of the Skokie and the north branch of the Chicago River. Another is along the latter stream at Edgebrook. Some forty tree species are here to be seen, including seven of the ten oaks of the Area, all five of the ashes (white, black, green, red, and blue), two hickories, two poplars, three cherries, seven Crataegi, magnificent hackberry, two elms, four willows, three maples, and numerous small species.

In April and May the forest floor is almost a solid color design of red, great, white, declined, and nodding trilliums, spring beauty, phlox, Ranunculus, false rue anemone, violets, wild ginger, blue and black cohosh, blue-eyed Mary, water leaf, adder's tongue, sweet cicely, geranium, and other lovers of shade and rich loamy soil.

It is to be earnestly hoped that in all such thickly populated forest areas the Forest Preserve Commissioners will see the wisdom of cutting out and maintaining trails that will lead by the beauty spots, but avoid their destruction by unhindered tramping.

The wooded areas of this section are rapidly being cut off in the furthering of various suburban subdivisions, and yet outside of the Preserves there are numerous tracts of wild land that may remain in their present condition for some years. One plot of woods in particular, a mile north of Sauganash and just outside the Chicago City Limits, embracing some 30 acres, is particularly inviting as a region to be visited by the plant lover. Soft maples, white and black ash, cottonwood, white and red elm, shag-bark and pignut hickory, red, pin, swamp white, and jack oak, all are abundant.

Many smaller tree types, hawthorns, plums, crabs, wahoo, and cornels, are numerous, and the damp forest floor of the elevated places between the bare wet season pond areas fairly teem with



MARSHALL HOWE

CHICAGO RIVER AT EDGEBROOK

ELM, SOFT MAPLE, HACKBERRY, WILLOW, AND BOX ELDER

shrubs and herbaceous species. The fine climber, moonseed, excels here, as well as the common cat-brier (Smilax hispida). Such moisture loving herbs as the two Indian turnips, adder's tongue, purple cress, white spring cress, the strict geum, wild garlic, numerous sedges and grasses, and many more may be found in this most removed of plant areas immediately adjacent to Chicago. It may be surmised that for the mushroom enthusiast the place is a wonderland.

As one passes up the Chicago River the adjacent lands become increasingly open, having been originally largely marshy. Drainage and cultivation are drying up the land. As far north as Shermerville, however, as shown by an illustration, there remain areas that harbor the wild plants. Between the upper reaches of the river and the Des Plaines was an original prairie, most of which, except along railroads and highways, has disappeared. Many small ponds abound with aquatic and shore vegetation. Here and there a copse reveals a little center of plant luxuriance.

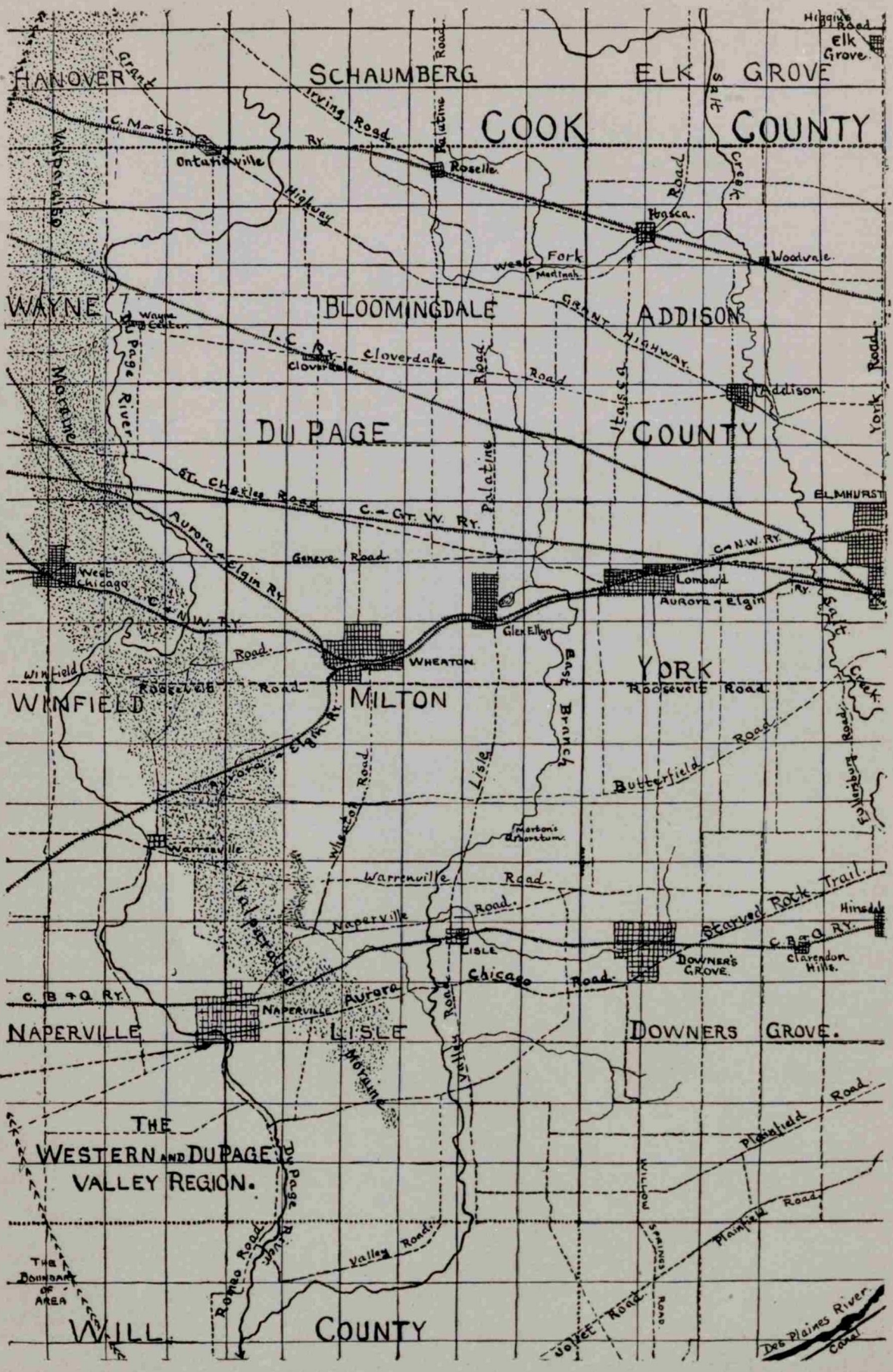
D. The Lake Flats of Ancient Lake Chicago

Little need be said of this portion, taken up as it is by market gardens, farms, nurseries, and other evidences of agricultural and horticultural pursuits. The roads harbor a few hardy survivors, vacant properties still produce now and then some treasure, the wet places remain vantages for marsh lovers, and weeds abound. As a whole, wild plants languish or die out.

FLORAL REGIONS No. III AND No. IV

III. The Des Plaines River Drainage Basin

IV. The Western Morainal Uplands



THE WESTERN MORAINAL UPLANDS

THE DES PLAINES VALLEY AND DRAINAGE BASIN

THE Des Plaines River valley proper is a very narrow and much elongated depression in the Late Wisconsin Drift, lying but a few miles west of the shores of Lake Michigan and extending in the area covered by the *Flora* from the vicinity of Joliet to the southern part of Lake County, Illinois. As a rule, the immediate valley of the river is but a few rods wide, consisting of an essentially level bench of alluvuim along one or both banks. From Lyons southwestward, however. there is a very pronounced widening, owing to the fact that this portion of the present valley was, during Wisconsin Glacial days, the outlet of the accumulated waters of Lake Chicago, which, perhaps a mighty stream, a mile in width but comparatively shallow, carried off the flood from the melting glacier, eroding the underlying Niagara limestone and producing the broad rock-floored depression found today. This portion is exceedingly interesting historically and Professor Hill's paper, following later, deals with some features in detail. It is the narrow valley northward from Lyons with its more or less extended drainage slopes that constitutes the subject matter of this section.

This drainage basin is rarely ever more than fifteen miles wide and has at no place any considerable elevation above the river surface. The drainage is often very incomplete, and small ponds, marshy depressions, and moist flats abound in every direction. Most of the ponds and marshes are without visible drains for surplus water. A few rivulets and small creeks serve but to emphasize this imperfection. There is one exception of considerable size, Salt Creek, which emptying into the Des Plaines at Lyons, has its head in the extreme northwestern part of the area, and which is, in itself considered, a very striking contributor to the flora. Other streams below Salt Creek, notably Flag Creek and Downers Creek, drain the region adjacent to and south of Downers Grove in



WOODRUFF

A POT HOLE NEAR SHERMERVILLE; A TYPICAL SHAGBARK

the midst of the morainal elevations. In periods of flood, as during the spring melting, broad torrents flow along these various tributaries, but the summer flow is very small indeed and often vanishes for many days in periods of drought. The general southward slope of the run-off is about one and a half feet to the mile. The larger part of the basin occupies the long eastern slope of the Valparaiso Moraine, penetrating in some of the western head branches of Salt Creek to a considerable distance into the heart of the great gravel, sand, and clay deposits of the moraine.

The immediate flood plain of the river is a trough-like depression usually but a few feet below the level of the adjacent lands. This trough in reality is but a very poorly developed axis of erosion in the till of the Wisconsin Drift, caused by the fluctuating waters of the river. This flood plain is from two to ten feet above the waters of the river and from five to ten or more feet below the general surface of the drainage plain on either hand. Between the river and the floor of the ancient Lake Chicago there is a group of till ridges that are more particularly prominent northwest of Chicago, known as the Lake Border Moraines; west of Glencoe, for example, there are three well represented linear elevations of this character.

In the neighborhood of Riverside and Lyons east of the Des Plaines there are some pronounced sand and gravelly areas caused by a merging of the old Lake Chicago shore lines, and these areas have great peculiarities of local floras. The watershed here is very uncertain and imperfect and the delimitation of the valley obscure. A natural channel known as Ogden Ditch remains even now, a striking testimony to the scant separation of the waters of the St. Lawrence and Mississippi systems. In early days a portion of the Des Plaines River flood water found its way through this ditch to Lake Michigan and at such times was used as a natural portage by the red men.

Throughout its course, as has already been suggested, the river bed is in glacial drift, and it is only in the immediate vicinity of Lyons that it reaches the underlying rock. The slope is very small indeed, rarely more than about one foot in a mile. South from the town named the bed is the Niagara limestone, and the fall of the

stream is many times greater, being some eighty feet from Lyons to Joliet Pool at Joliet. It is in this latter portion that the only considerable natural outcrops of the rock strata occur, either along the river or the small tributary streams and erosion valleys. The level nature of the upper valley of the river is explained by the fact that it occupies the *ground moraine* between the Valparaiso and Lake Shore moraines before noted. Ground moraines, formed



WOODLANDS OF THE LATE WISCONSIN GLACIATION
RED, WHITE, AND BLACK OAKS, HICKORY, BLACK CHERRY

by bottom deposits of débris from the ice sheet, are normally and characteristically nearly uniform in surface level, with very few pronounced elevations or depressions.

The usual thickness of this drift deposit is less than one hundred feet, becoming practically nil at the southwestern outcrops and reaching its maximum along the crests of the Valparaiso Moraine, where the underlying Niagara limestone may be buried to a depth of two hundred and fifty feet. Generally there is very much less of a deposit. As might be expected from the various agencies that have contributed to the topography of the area, the soils vary

greatly, showing all degrees of composition and fertility, from the sterile rock outcrops and gravel knolls through sands, clays, loams, and alluviums to those composed mostly of vegetable débris, as in the peat formations. The prairie portions, as a rule, have a black surface loam underlain by glacial clays, while the morainal ridges are variable mixtures, with much sand and clay and often gravel deposits of some extent.

The woods adjacent to the Des Plaines and Salt Creek are possessed of soils often very rich in leaf mold and are probably the most fertile of all, as may be well believed by observation on the variety and exuberance of plant growth. As the water content varies from that of the swamp and marsh to tracts of land almost desert in dryness, the soil variations and the varying percent of water available gives every possible gradation of growth of vegetation. The alluvium of the Des Plaines is often so saturated as to prevent growth of any but true hydrophytic plants.

In discussing the flora of this section convenience leads us to treat of the following topographic areas, each having certain peculiarities of plants thereupon dependent:

(A) The Original Prairies
(B) The Wooded Slopes
(C) The Alluvial Trough
(D) The Moraine Ridges
(E) The River-trough Banks
(F) The Roadsides and Fields

(A) Most of the *Original Prairies* have long since disappeared, under the advance of the plow and mowing machine and the extension of market garden enterprises farther and farther afield. There are, however, very many small tracts, widely scattered throughout with a very few larger ones of thirty acres or more. Not all are now pure prairie lands but the prairie features still predominate. Southwest, west, and northwest of Dunning are typical examples that well illustrate these features. Everywhere the practically ubiquitous blue grass has gained some foothold, but the real prairie grasses are, despite its intrusion, very much in evidence. Blue-joint, tall oat grass, blue stem, cord grass, crested grass, manna grass, panic grass, porcupine grass, and early bunch



WOODRUFF

THE DES PLAINES

grass (Andropogon, Sorghastrum, Calamagrostis, Spartina, Koeleria, Glyceria, Panicum, Stipa, and Sphenopholis) appear in varying numbers, according to soil and moisture. A large variety and number of sedges (Carices) are constantly present. Among the higher monocotyledons, star-grass, blue-eyed grasses, and Turk's cap lily (Hypoxis, Sisyrinchium, and Lilium superbum) occur in great numbers. Certain orchids, such as the small white lady's slipper and the white fringed orchis (Cypripedium candidum and Habenaria leucophaea) are locally present. Hundreds of the latter were to be found up to 1914 on the flat, wet prairies somewhat east of this region, well within the city limits of Chicago. The swales west of Dunning are gorgeous in early July with the blossoms of the magnificent lily above named. So far as a very careful examination of all accessible materials permits, Lilium canadense does not appear as a member of our flora, although numerous collectors report the same on the evidence of pubescent forms of L. superbum.[1] The meadow lily (L. philadelphicum var.) is very rare, apparently requiring a more exacting condition of soil, moisture, and topography.

Among the polypetalous forms some very interesting species deserve record. The red prairie Geum (Geum triflorum) occurs in two localities each occupying an area of perhaps ten square rods. This is the most localized of our plants, only two other stations near our area being recorded, one at Ashburn, and another at West Chicago, more than thirty miles distant. It is associated in all its stations with rough alum root (Heuchera hispida), the two species seemingly requiring the same soil conditions. This Geum is apparently a survival of a more numerous ancient race and is doomed in all of the known localities by the encroaching blue grass (Poa pratensis). The inference is drawn that lime is a controlling factor in its choice of habitat. Near by and requiring similar conditions are many specimens of lead plant (Amorpha canescens). This species is extremely abundant on the bare limestone hills of Jo Daviess County, where its local name "lead plant" is very appropriate. It may have first received its

[1] Farwell (Torrey Bulletin, p. 351-358, 915) makes this rough western lily a new species, Lilium Michiganense.



PEPOON

A SECOND GROWTH OAK FOREST, JACK AND RED OAKS

A VIEW IN THE DES PLAINES COUNTRY. SUCH A WOODLAND IS AN IDEAL REFUGE FOR BIRDS

common appellation in such a lead-producing region. The prairie wild indigo (Baptisia bracteata), the cream-tinted, large-flowered species, is occasional and is always a sure evidence of an undisturbed prairie soil. Like the Geum this species approaches extinction within our limits but its final departure is far distant, because of the refuge it has found along the railways. The Seneca snakeroot (Polygala senega) delights in dry sunny knolls, growing in well-populated colonies and, like Baptisia, is evidence of virgin conditions.

Two Violets, the larkspur and lobe-leaved (V. pedatifida and V. palmata), are found in very great numbers and exhibit the greatest luxuriance of foliage and blossoms. Each forms large clumps often with from twenty to fifty flowers of very deep hues. The "palmates" choose the drier portions and the "pedatifids" the moister. Nowhere else has the author seen finer displays of these two species. The prairie parsley (Polytaenia nuttallii) is another typical prairie plant that is even more fastidious of

habitat than most of its neighbors. Occurring as a sparsely distributed plant it seems no longer at home and doubtless, with others of like peculiar requirements, will soon vanish from our flora.

The sympetalous plants of note are few. The shooting star (Dodecatheon) is extremely common and in the days of early June fairly colors the more elevated knolls with its delicate pinks, lavenders, and white. This variation in color is very pronounced and occasional plants have deep rose-pink blossoms that are strikingly beautiful. This prairie plant takes kindly to the sunny open border of the garden, increasing in size and depth of hue. The red prairie phlox (Phlox pilosa) is everywhere the most abundant of the real wild folk of the open, and patches of several acres are common. Several color races exist, varying from white to deep red, but all have the carmine "eye." Strangely enough this species does not take kindly to the flower garden, where its woodland cousin, the blue wood phlox (P. divaricata), runs rampant, but it is a much more striking plant. The showy wild sweet



BUR OAKS, CHARACTERISTIC TREES OF THE LAKE BEACHES

William phlox (P. glaberrima) is abundant west of the Des Plaines and northward also in the moist depressions and in such situations often dominates in the color scheme. It is a splendid addition to the wild garden. The long-flowered puccoon (Lithospermum angustifolium) is a very rare and local plant and generally indicates sandy or gravelly environment. Very striking it is when in full bloom in great numbers. As elsewhere noted, this species long occupied a vacant block at the foot of Addison Street, Chicago, near the lake, but of necessity its tenure of life here was very uncertain and the plant now has been destroyed.

Two of the figworts are much in evidence on all the drier portions. One is the brilliant scarlet painted cup or paint brush (Castilleja coccinea) which covers limited areas very densely. In the sand flats of the Dune Region practically all are scarlet, while on the gravelly border of the Little Calumet Valley, south of Tolleston, Indiana, all are yellow. What the explanation may be is not clear but it evidently is a matter of soil composition. Gray says, "rarely yellow," a condition certainly not true of our prairie plants. May iron in the soil or its absence determine the color? These brilliant plants absolutely refuse to be domesticated, and while their root parasitism is not ordinarily apparent, it must be a condition of their successful growth. The common betony (Pedicularis canadensis) is also abundant in local communities and here is always *yellow*, whereas at the southeast, in the sand hills and clay hills of southwest Michigan, it is as common to see the red form. Possibly the two related species respond in the same manner to chemical salts. The edible valerian (Valeriana edulis) is found here and there where the slope merges into the marshy flat. If the Indian ate this plant his taste was certainly not highly cultivated. The only *composites* that need special mention are the fragrant and showy pasture thistle (Cirsium pumilum), that has a great liking for a sunny slope, the golden ragwort (Senecio aureus) that makes whole ranges of swales a brilliant orange color, the purple cone flower (Brauneria purpurea), that along the western marg n accentuates many a dry slope, and the Indian plantain (Cacalia tuberosa), that colors whole meadows in August with masses of white.

(B) *The Wooded Slopes* are very rich in species and very prolific in individuals. Two areas near each other, north and south respectively of the intersection of Belmont Avenue and the Des Plaines River, afford a good picture of the abundance of interesting forms in these rich and well-protected woodlands. The loose and porous leaf mold gives a plentiful supply of plant food and supports some rare and fine plants in unwonted luxuriance. Without attention to orderly arrangement, but just as they are found, mention may be made of the more conspicuous or interesting species. The gross-leaved bear's-foot (Polymnia) is common and found here only. It is exceedingly fragrant and this fact is a never-forgotten surprise, for the flowers are of such insignificant form and color as almost to escape notice. The book speaks of the odor as "heavy." Perhaps, but many of my friends have testified to the pleasantness of it. It seeks ever the most fertile spot in the densest shade. Blue cohosh (Caulophyllum) and the two baneberries (Actaea alba and A. rubra) occur sparingly. The latter two, as a rule, grow singly and the Caulophyllum in colonies. All three prefer moisture. The great fibrous root masses of the blue cohosh suggest at a glance possible medicinal worth. The red baneberry is indeed a "*rara avis*" among plants, so rare in fact that but few collectors, or better still, observers have seen it at all. The innocence, or blue-eyed Mary (Collinsia verna) and its color form, dignified by a separate name in Gray, (C. violacea) actually carpet the surface in parts of these woods. These species appear to be emphatically Des Plaines types and are found more or less along its whole course, in suitable places. The false rue anemone (Isopyrum) flourishes as nowhere else, on all low-lying portions, associated with Jacob's ladder, white dog-tooth violet (Polemonium reptans and Erythronium albidum), Phlox divaricata, and the red and declined trilliums (Trillium recurvatum and declinatum). The Dutchman's breeches (Dicentra cucullaria) occasionally gladdens the eye, but its cousin, squirrel corn (D. canadensis), with its yellow root tubers, is almost as rare as the proverbial hen's teeth. This species in southwestern Michigan is always a plant of the beech woods. Doubtless it misses here its mighty protector and languishes or dies outright. It is a climax forest plant, and in



WOODRUFF

THE GLENWOOD BEACH

such situation the surface mold is often actually sprinkled with its golden tubers.

The feverworts or horse gentians (Triosteum perfoliatum and T. aurantiacum) send up scattering sentinels here and there, and the broad-leaved Lithospermum (L. latifolium) is easily overlooked along the wood border. Jeffersonia or twin-leaf was originally common locally in some of the river-woods near the northern limits, but the destruction of these woodlands has seemingly caused the extermination of this very interesting plant. The same is true of golden seal (Hydrastis canadensis) and ginseng (Panax quinquefolium), both originally frequent in all the woods having suitable soil. Here, however, another factor has hastened the demise, namely, their value, real or imaginary, in medicine. In a similar bit of woodland on the Chicago River, ten years ago, a small patch of Hydrastis, numbering possibly a hundred plants, was found in bloom. Today there are none, due to botanists, picnickers, herb gatherers, the cutting off of the trees, and possibly other causes. The problem of saving our wild plants has many angles and sometimes the thought comes, "What is the use? Let them go and replace them with cultivated forms and save all the energy that, at times, appears wasted." The chance location of a wood path, leading within ten feet of the above-mentioned patch, was the initial, unpremeditated death call of this little group. As effective, however, as willful destruction, for the traveller could not but see the curious and coveted plant.

(C) *The Alluvial Valley Trough* closely adjacent to the river has a few plants of especial note. The largest colony in our area of the beautiful Virginia cowslip (Mertensia) lies close to the stream north of River Forest. Hundreds of vigorous plants are growing here and as this station is in the Forest Preserve the chances of long life are excellent. Three other colonies are known to the writer, one on the alluvium of the North Branch, below Edgebrook; a second near the mouth of Skokie; and the third on the DuPage River, at the margin of our district. There are thousands of spots that appear equally suitable for this elegant plant, but the plants are not found there and, like many another distribution problem, the solution is not found. The money-wort

(Lysimachia Nummularia) is an introduction that is taking absolute possession of large areas and, acting like many another foreigner, plant or animal, drives out those "to the manner born.' This species is, without doubt, a flood-distributed plant, originally having its starting point at some town or residence on the upper river. It is a fine aquarium plant, growing well in water. The adder's tongue (Erythronium albidum) is exceedingly abundant, forming almost solid carpets in very many places, one plant in fifty perhaps of blooming age. The migration downward of the bulbs year by year is very interesting but makes transplanting very difficult. E. Americanum, the yellow species, is as rare as the other is common and acts like an estray from its center of abundance east and northeast.

Below Lyons the broad valley, often with its rocky floor barely concealed by a thin coat of black soil, shows some marked departures from the upper portion. This really belongs to a chapter to follow but some notes on certain species that extend from the junction of the two parts southward will be in order.

The two species of Hibiscus (H. Moscheutos and H. militaris) occur, but are rare. Neither are strictly at home, the former being distant from its sand and marsh home in northwestern Indiana and eastward, and the latter evidently being an immigrant from down the Illinois River where it flourishes like "the green bay tree." Great numbers of marsh plants abound, the drainage being very imperfect, so that bogs, pools, marshes, and moist depressions are common. Sedges, rushes, bur-reeds, flags, and species of Potamogeton, and Polygonum are everywhere. Romeo Island, near the limit of our flora, possesses a few unique species. The whole island is possibly three feet above the river and the soil is always moist, full of humus, and densely shaded by tree growth. The "Illinois rose" (Rosa setigera) is scattered here and there; the lake cress (Radicula aquatica) is frequent in the pools; the wood cress (R. sylvestris), with headquarters along Salt Creek, extends to the island; the small flowered Corydalis (Corydalis micrantha) is common under gooseberry bushes, where it seems to have made its last stand under this prickly protector. With it the great white violet (Viola striata) is common and very striking. Far different

is this habitat from the Jo Daviess County one on a vertical cliff of wet limestone. The spring Geum (Geum vernum) occupies the open woods and is also a traveller from the south on the Salt Fork. One woodland plant of great interest is the green trillium (Trillium sessile) that until late years was unknown to our district. Recently, however, many have been found near Addison,



GOODMAN

A NATURAL GRAFT NEAR THE DES PLAINES RIVER
HACKBERRY AND ELM

a few have been reported from Naperville and many are found near Hickory Creek, not far from New Lenox. These three stations are the only ones known to the writer in all of his wanderings through Michigan, Illinois, Indiana, and Wisconsin. It is probably overlooked or confused with the bloody butcher (Trillium recurvatum) which is everywhere in damp woodlands. The green dragon (Arisaema Dracontium) is a striking and rare species, attaining a much larger size than does the Jack-in-the-pulpit (A. triphyllum). In suitable boggy spots the skunk cabbage (Symplocarpus) abounds and to it belongs the distinction of

being our earliest blooming plant, flowering by mid-March, or even by March first, as in 1922. For ten years this plant has bloomed between the dates given, though stragglers continue well into April.

(D) *The Morainal Ridges* may be dismissed with a few words. Much of the land is cultivated but numerous "patches" are found and these support the ordinary flora of such localities. The woods at Downer's Grove and Glen Ellyn have long been noted for their many species and in bygone days both were Meccas for botanically minded pilgrims, but much of the wildness has gone and only mutilated fragments remain of the best plant haunts, that originally were the pride of the collector. These woods abounded in golden seal, ginseng, bloodroot, dog-tooth violets, wild leek (Allium tricoccum), bellwort, hepaticas, spring beauties, wind flowers (Anemone quinquefolia), wild geraniums, phlox, Jacob's ladder, and a host of others that made the forests gay with color. Of all these only a "corporal's guard" now remains.

Some of the bare and barren, gravelly, sandy or clay knolls of the morainal hills are interesting places and the prairie forms here, making their last stand, are a pathetic reminder of the bitter struggle plants are subjected to in order to maintain a hold on the and, against the combined attack of cow and sheep, hog and man. Too steep for the plow, these neglected spots are havens of refuge for such species as the Pasque flower (Anemone patens), alum root (Heuchera), the great white Potentilla (Potentilla arguta), Seneca snakeroot, the green milkwort (Polygala verticillata), bird-foot violet, violet wood sorrel (Oxalis violacea), puccoons (Lithospernum canescens and longiflorum), betony, wooly milkweed (Acerates lanuginosa), ground cherry (Physalis), pasture thistle, and cudweeds (Antennaria).

(E) *The Valley Bluff* or low wooded *rough bank* is generally a very steep descent from the upland to the alluvial floor and as a rule is rarely more than ten feet in elevation. Here is an asylum for a host of plants that delight in shade, moisture, a clay subsoil, and the exposure that goes with an abrupt declivity. A few of the prominent species may be named. Several scouring rushes (Equisetum) and ferns are at home, the common species of the

former being the smooth scouring rush (E. laevigatum) and the winter rush (E. hyemale), with the possible presence of the robust form of the first, classified as E. robustum by some. Wild rye (Elymus) is much in evidence and seven species of Carex here find suitable homes. True and false Solomon's seal (Polygonatum and Smilacina) flourish. Three species of bank cress or Arabis (A. laevigata, A. canadensis, and A. dentata), many tick trefoils (Desmodium), two gentians (G. flavida and G. quinquefolia), the pale Indian plantain (Cacalia atriplicifolia), asters, solidagos, and the white snake root (Eupatorium urticaefolium) are located here. A number of shrubs find congenial haunts,—witch-hazel, shad bush, wild plums, crab apple, bladder nut, wahoo, choke cherry, black haws, nine-bark, yellow honeysuckle, wild grapes, moonflower, bittersweet are some of this fine company. It ought to be appreciated greatly that much of this fine plant region is included in the Forest Preserve before mentioned, and so is saved for all time from the hand of the spoiler.

On the lower river the bluffs assume at times the character of low cliffs of limestone or very steep bare slopes and here a number of ferns grow that are not found elsewhere in our limits. Cliff-brake (Pellaea), walking fern (Camptosorus), and bladder fern (Cystopteris), are present and all are at home as thoroughly as on the much more extended cliffs of the north. A curious fact is that these three species are gradually taking possession of the artificial cliffs formed by the railways of the northwestern part of the state, in their deep rock cuts through the hills. How the spores obtain lodgement is a question treated at length in a paper by the writer. (Trans. Illinois Academy of Science. Vol. 9.) As will be observed by a study of the catalog, these barren rocks and bluffs are often the habitat of but a single plant or of a very few plants of species that are not found anywhere else in our area,—this location being far distant from the species center of distribution. Outside of the fact of appropriate habitat, may not these plant waifs find growth in such places because the sites are so largely unoccupied by competitors?

(F) *The Cultivated* and *Roadside Areas* are yielding an ever-increasing horde of weeds, and many of these are spreading out



WOODRUFF

THE DES PLAINES RIVER NEAR LIBERTYVILLE

BLACK WILLOWS ON THE RIGHT

from the numerous great trunk railway lines that are exceedingly active factors in plant distribution. Species of the Atlantic seaboard, the Gulf Coast, the far southwest and Mexico, the plains, and even the Pacific region mingle their growth in summer and while a large percent perish in winter, some obtain footholds and so a slow but ever-increasing addition to our flora is being made. Some of these plant tramps of the railway and highway sides which are becoming more and more common may be mentioned without attempt at proper sequence. The two species of Tragopogon are striking plants. The purple flowered salsify (T. porrifolius) is very beautiful in the early morning with its great flowers glistening with dew, but by noon the blossoms close tightly and are followed within a few days by large seed heads of down. The yellow hawksbit or goats-beard (T. pratensis) now occupies large areas along railway tracks. The showy false dandelion (Sonchus arvensis), one of the most pernicious weeds of the Canadian northwest, has already obtained several congenial locations and may shortly be counted on to make itself generally known. Chicory is rapidly increasing, evidently because of centers where it is cultivated for its roots. Tansy occurs in isolated colonies. The far western gumweed has found lodgement on gravelly soils and possesses all necessary means for rapid spreading. The ox-eye daisy, pest of New England, appears perfectly at home and the white top (Erigeron annuus) promises to become the nuisance it is in Michigan, Indiana, and Kentucky.

The small morning glory (Convolvulus arvensis) makes glad the roadside banks. Yellow and white sweet clovers (Melilotus) make fragrant areas, the former being much less common than the latter. The overlooked black medick creeps everywhere through the grass. In far separated localities are now and then found two mints, spearmint and peppermint, but they do not flourish as they do farther east and north. The musk mallow (Malva moschata) is a rare roadside species, appearing largely in the white form. The red nightshade (Solanum Dulcamara) is common locally. The common buckhorn (Plantago lanceolata) begins to spread about Chicago and is by far the worst of the plantains. Wild parsnip occupies the roadside, in places, in solid masses and with

the carrot is found abundantly. The tall buttercup (R. acris) does not seem to spread in this region as it does in the east and yet it has been here thirty years. Something, fortunately, is lacking. The same may be said of St. John's-wort (Hypericum perforatum).

Many others might be named but the above list is sufficient to show the diversity of these introduced forms. All are permanent additions to our flora. Some will doubtless become more and more troublesome. Along the railways are numerous plants that are very transient, the result of train-dropped seeds. These may be learned by consulting the catalog. Altogether there are more than one hundred of these immigrants, some of which will disappear, but most of them will become naturalized.

The forest growths are similar to those of other portions, but certain peculiarities of distribution must be mentioned, because of some very interesting features of plant occupancy. The Des Plaines Valley is the chosen home of a host of hawthorns (Crataegi), that have been so carefully and painstakingly studied by our good friend, the late Professor E. J. Hill,[1] with the collaboration of Professor Sargent. The soil and moisture content seem exactly suited for the fullest development of the genus, and this may account for the great diversity of forms in a group of unstable plants. Most of these forms have been denominated species by Professor Sargent, and Professor Hill in his writings subscribes to this view. The results are not satisfactory to the average working botanist, who, as a consequence, has lost all command of specific determination for most of these beautiful forest representatives. One cannot but remember the "seedling" apples, plums, and peaches of the old home orchard, and wonder why they too are not species. The group today is hopeless for the young student and for many of more mature years, and one need but compare the first edition of Gray with the up-to-date manuals to observe the seemingly disproportionate species building in this genus.

The most noteworthy trees other than the red-haws may be briefly enumerated. The black willow reaches its best development and gives some idea of the size farther south, where the species assumes value as a lumber tree. The true pignut (Carya

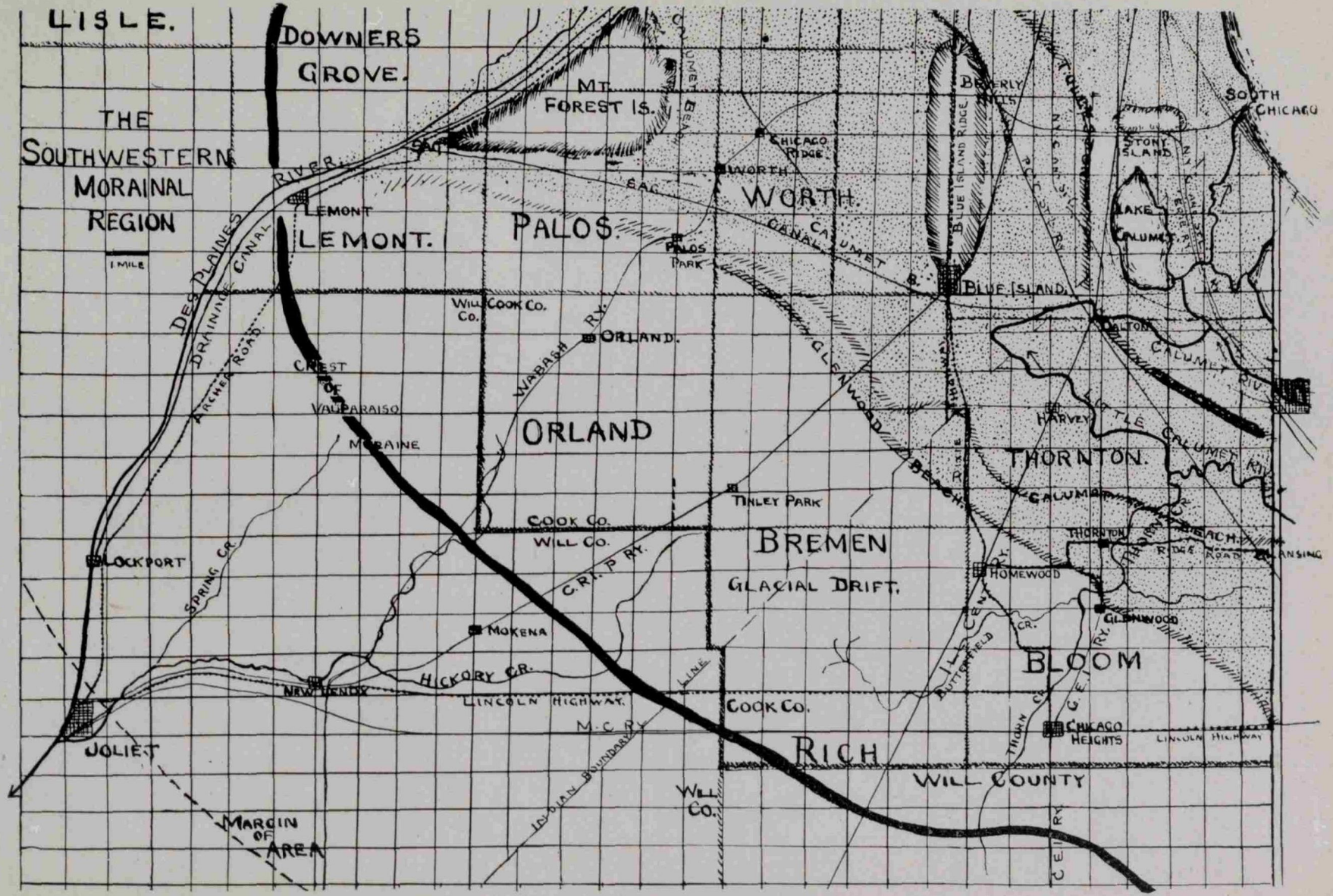
[1]Deceased January, 1917.

glabra) is certainly found at the northern border, although most of the specimens collected prove to be the bitternut (C. cordiformis). The butternut reaches its best development, as do the white elm, red elm, hackberry, wild plum, soft maple, and white ash. The blue ash (Fraxinus quadrangulata) is found in a few localities; the green ash is more common but usually overlooked; the black and red species are here and there present. As most of the larger tracts of woodland along the river to the north limits of our district are included in the lands acquired by the Forest Preserve, the region promises to be a place where arboreal forms will have a permanent home free from molestations, and will become an increasingly valuable asset in the study of forest growths.

This is a suitable place to urge upon all societies, dealing with our forests, either directly or otherwise, and in particular upon the Honorable Commissioners of the Cook County Forest Preserves, the advisability and value of locating large, perfect, representative specimens of each tree species found within the Preserve limits, and marking each by proper permanent labels. Such a procedure would enhance greatly the value of our Preserves and serve as a great out-door school of forest education. Take, for example, the great hackberry in Northwestern Park at Des Plaines. It is one of the finest, if not the very best, found in all the Chicago Area. What more appropriate than a well-lettered tablet, giving name, size, age and brief data of interest? The exploration work may well be given over to the Boy Scouts and the Camp Fire Girls, as "fitting in" with their activities and at the same time accomplishing constructive work of permanent worth.

FLORAL REGION No. V

The Southern and Southwestern Moraine



THE SOUTHWESTERN MORAINAL REGION

THE SOUTHERN AND SOUTHWESTERN MORAINE AND THE ADJACENT LOW-LYING REGIONS, PORTIONS OF COOK, WILL, AND DU PAGE COUNTIES, ILLINOIS

By Professor E. J. Hill

Note: Professor Hill died in January of 1917 and the writer has taken the liberty of making some additions to the paper, in the way of using common names and placing the technical terms in parenthesis. This will doubtless commend itself to the ordinary reader, for whom, at least in large part, *The Flora* is intended. The botanist will not be harmed by seeing these common names in print; he may ignore them if he pleases.

THE territory considered in this article comprises a part of Cook, Will, and Du Page counties, Illinois, and of Lake County, Indiana. Twenty or more townships are embraced wholly or in part, making an area of about 700 square miles. It extends from west of the Des Plaines River, between Lyons and Lockport, Illinois, to Clarke and Gary, Indiana, taking in at the south part the towns of Crete, Monee, Frankfort, and New Lenox, and at the north the southern part of Chicago. The physiography of this region may be treated under two general heads, the Valparaiso Moraine and the Chicago Plain. The former name is applied to the series of hills and undulations which form the water-parting between streams that flow into Lake Michigan and those that belong to the Mississippi system. The Des Plaines River, forming a portion of this system, makes an exception, since it breaks through the moraine and drains the western part of this region. The Chicago Plain is that part of the area which extends from the inner base of the moraine hills to the shore of Lake Michigan. It was formerly covered by the waters of the lake when its outlet was southward through the

valley of the Des Plaines and the Illinois rivers to the Mississippi. To this enlarged lake of an earlier era geologists have given the name of "Glacial Lake Chicago," the "Chicago Outlet" to the larger channel through which its waters flowed. The series of hills is the terminal moraine of the Wisconsin glacier which once covered the region and had its greatest extension southward at the time when they were formed. The moraine takes its name from the city of Valparaiso, Indiana, which is situated on a prominent part of it. It is composed of material heaped up by the glacier and left at its outer margin when the ice melted and the glacier withdrew. The general direction of the ridge is southeastward in Illinois, turning eastward south of the lake. The crest is from 20 to 35 miles from the mouth of the Chicago River, coming nearest to this point in the southwestern part of Cook County. The general height is from 700 to 750 feet above sea level or 120 to 170 feet above that of Lake Michigan. The highest point within the limits of this district of the flora is slightly above 800 feet, being near the village of Monee in Will County, or about 225 feet above that of the lake. This belt of hills is from 10 to 15 miles wide. Mount Forest forms a detached portion of the moraine, being cut off from the main body by the two branches of the Chicago Outlet, one of which entered the valley of the Des Plaines between Riverside and the vicinity of Summit, and the other by way of the Sag at Sag bridge. It was an island at the time of the glacial Lake Chicago, inclosed by its waters and those of its two outlets.

The Chicago Plain is from twelve to fifteen miles wide. As the altitude of the plain at the inner margin of the moraine is but from 50 to 60 feet above that of Lake Michigan, the ascent is too slight to be perceptible to the eye. A few features stand out with more prominence, Blue Island Ridge, Lane's Island, and Stony Island, an outcrop of limestone. Blue Island Ridge is a till ridge, apparently belonging to an inner moraine system probably of somewhat later time than that of the Valparaiso Moraine, but of the same glacial period. The other features of the plain are, in the main, traced to the Glacial Lake Chicago, to its beaches, bars, and the spits which jutted out from its shores. They chiefly

consist of terraces and low sand or gravel ridges with intervening sloughs, marshes, and swamps, and more or less parallel with the shores of Lake Michigan.

Ancient Lake Beaches

Three periods are recognized at which the waters of the glacial lake stood at different levels for a time long enough to form permanent beaches. They are found near the bounds of the present lake, being especially prominent at its south end. The outermost is known as the Glenwood Beach, from the village of Glenwood, at whose site it is well marked. East of the Des Plaines it appears in the district under consideration about three miles south of Summit, coalescing with the Chicago Outlet at the north end of Mount Forest. It skirts the east side of this ridge until interrupted by the other branch of the outlet through the Sag. South of the Sag it is shown again in the town of Palos, bearing southeastward through this town and through Bremen, Thornton, and Bloom, entering Indiana at Dyer and trending eastward from there. It is mostly a terrace cut in the drift of the bordering Valparaiso Moraine, with interrupted stretches of beach deposits of sand or gravel. The sand in places has the character of dune or wind-drifted sand, as seen more fully in the town of Thornton, and in Lake County, Indiana, the dunes east of Dyer being of considerable height and with the usual dune vegetation. When the waters receded from this beach they formed at the next stage of prolonged activity the Calumet Beach, so called because its general course is parallel with that of the Little Calumet River, south of which it runs for much of its length. East of the Des Plaines it is seen at Summit as a low sandy or gravelly terrace running southeast to the north end of Blue Island Ridge, and along its eastern base to the Calumet River, having been interrupted there by the Sag Outlet which was between Blue Island and Thornton at this stage of Lake Chicago. East of Homewood it lies south of the Little Calumet, bordering its valley, the villages of Thornton, Lansing, Highland, Glen Park, and East Gary being near it and marking its general course. East



WHITE OAKS ON THE SLOPE OF AN ANCIENT LAKE BEACH

of Homewood and Thornton it takes a more decided dune character, with the floristic features of the dunes. The third, or Tolleston Beach, generally from two to six miles from the present shore of Lake Michigan, is similar in structure to the Calumet Beach, but not always so well defined. In the southern part of Chicago it appears between Ashland and Western avenues, going southeastward between Auburn Park and Gresham, then toward Pullman and Kensington, here forming along the east side of Michigan Avenue a well marked cut-terrace in the boulder clay, and reaching the Sag Outlet at Riverdale. This outlet has become much narrower since the Calumet stage of Lake Chicago, for the beach soon appears again south of the Calumet at Dolton. From here eastward into Indiana it is readily traced by the sand ridge and dunes which pass south of Hammond, through Hessville to Tolleston and beyond, taking its name from this village.

Drainage

1. *The Chicago Plain*

The importance of these beaches physiographically in the present condition of the Chicago Plain consists in their determination of the drainage of the greater part of it by the two parts of the Calumet River, the Little Calumet and the Grand Calumet and their affluents. The mouth of the Little Calumet River during the Glenwood Beach and Calumet stages of Lake Chicago was between Porter and Dune Park in Indiana. During the Tolleston stage or before its close it had advanced westward to the Sag Outlet near Blue Island Ridge, winding through the valley between the Calumet and Tolleston beaches, since the slope of the ground, and in consequence the drainage, was still to the west. When Lake Chicago ceased to use this outlet and became a part of the St. Lawrence system, draining eastward, the Little Calumet turned in that direction, becoming the Grand Calumet, making the abrupt bend near Blue Island, and running for about twenty miles almost parallel with its former course, entering Lake Michigan eventually north of Miller. Doubtless, wind-drifted sand prevented its entrance farther west, forcing it



WOODRUFF

THE EAST SHORE OF WOLF LAKE

back from the shore of the lake though running so near and almost parallel with it. The outlet at South Chicago is held to be a comparatively recent one, perhaps in historical times, made by the water breaking away from the earlier river near Hegewisch and forming a new and shorter channel to the lake. By deepening this channel in making the harbor at South Chicago, and by dredging above, this subsequently became the sole outlet, the one near Miller being silted up, so that water which entered the Grand Calumet, except at flood stages, flowed westward.

The shallow lakes, ponds, and sloughs in the eastern part of the district were drained either by the two parts of the Calumet River, or had an outlet directly into Lake Michigan. Lake Calumet, the only one west of the Little Calumet, is connected with that stream. Wolf Lake, joined near its south end with Lake George, has its outlet into Lake Michigan. Berry Lake, now nearly drained and scarcely more than a slough, found an outlet to the lake at Whiting, being joined first by that of some sloughs to the eastward. A small stream, perhaps artificial, tapped the longest of these sloughs between Edgemoor and Pine, entering the lake barely more than a mile away. There were no more outlets between it and the mouth of the Grand Calumet and but one natural outlet, except mere rills among the sand hills, between the Grand Calumet and Trail Creek at Michigan City, West City Creek, north of Porter. (This is called Dune Creek on some maps, but West City, or City West Creek, as it is also worded, seems the older or historic name.)[1] The appropriation of the land for industrial purposes has changed most of these features, destroying some outlets and making others in new places. But the above was the case before there was any special disturbance of natural conditions east of South Chicago, both in the district under consideration and in the dune region beyond.

The drainage of the remainder of the Chicago Plain, except as connected with the Des Plaines and the two branches of the Chicago River, was by Stony Brook, the South Branch, and some

[1]Also Fort Creek, as in the catalogue.

streamlets in Hyde Park. One of these entered the lake within the limits of Jackson Park, near 63rd Street, another farther south near Cheltenham Beach. These took the overflow from some of the marshy land near the lake before they were supplanted by railroad ditches and ultimately by sewers.

2. *The Valparaiso Moraine*

The streams on the north side of the Valparaiso Moraine, from the source of the Little Calumet in Indiana to the vicinity of Palos in Illinois, form a part of the Calumet System. Deep River and Turkey Creek, its principal branch, are the largest tributaries, barely touching the district considered on the southeast. The principal tributary of the Calumet in Illinois is Thorn Creek and its two branches, Deer Creek from the southeast and Butterfield Creek from the southwest. These unite with Thorn Creek at Glenwood, within a few rods of each other, whence the main stream, crossing Glenwood Beach, makes its way through the Chicago Plain. Of the small streams west of Thorn Creek one of the longest comes from the vicinity of Tinley Park and enters the Calumet just south of Blue Island. Another is Bachelor's Grove Creek which rises in Orland and taking a general northwestward direction joins Stony Brook just west of Blue Island. The bed of the latter lies in the bed of the Sag Outlet of the Glacial Lake Chicago and was formerly utilized as part of a feeder for the Illinois and Michigan Canal. This was done by means of a dam across it before it reached the Calumet east of Blue Island, and by one in the Calumet at Blue Island, thus raising the water of the Calumet above a level which gave it a westward flow through a cut to Stony Brook, whose current was thus reversed and passed into the canal at Sag Bridge. When water came to be supplied to the canal by pumping from the South Branch of the Chicago River the dams were removed and the streams left to their natural course. But this serves to show how low is the water-parting a little west of Lane's Island between the St. Lawrence and the Mississippi systems of drainage. For a short distance between this point and the Des Plaines the streams

which flow down the north slope of the moraine and from Mount Forest make their way to this river through the old Calumet Feeder.

The south side of the Valparaiso Moraine within the district between Monee and the Des Plaines is mostly drained by Hickory Creek and its branches, the principal being the North Branch and Spring Creek, with a general southwestward course. The North Branch unites with it near New Lenox, and Spring Creek within the city of Joliet before it reaches the Des Plaines. North of these the largest stream is Long Run, which flows west from the vicinity of Orland and enters the Des Plaines below Romeo. This and Hickory Creek run in parallel valleys between somewhat parallel east and west ridges. Five of the streams mentioned, the North Branch of Hickory Creek, Spring Creek, Long Run, Bachelor's Grove Creek, and one running north through the town of Palos, which may be called Palos Brook, rise in the town of Orland, which forms a center for those flowing in various directions. The hills there are about 700 feet in altitude.

West of the Des Plaines the slope of the moraine through which the Chicago Outlet passed is mainly towards this river within the territory embraced. All the streams are small. The most important are Flag Creek, which flows into the Des Plaines opposite the Sag, Sawmill Creek, coming in below Byrneville, and Isle la Cache Creek, entering opposite to Romeo. This rises in the same marsh as does one of like name that goes westward into the Du Page River.

The Till

The materials transported by the glaciers that once covered the region determine to a large extent its mineral characters and that of the overlying soil. On the moraine the upper part is a yellowish, pebbly clay or till. Oxidation or leaching has gone on in this to the depth of five or six feet. Beneath this is the blue till or boulder clay in which pebbles of various sizes as well as boulders may be enclosed. Beds of sand and gravel are frequent. These are the source of water for wells, and of springs that find

an outlet at lower levels by the base of hills or along the banks of streams. In the Chicago Plain the blue till is nearer the surface except where it is covered by deposits of sand or gravel, due to winds or to the waters that once spread over it. These deposits are of variable thickness, with an average of about ten feet near Lake Michigan, though deeper in the more characteristic dune region or areas. Leaching has taken place in the till of the Plain to a less depth than on the moraine, varying from a few inches to about two feet. The clayey matrix of the till has been found to be highly calcareous. Examined under the microscope it shows angular fragments of slightly rounded grains of limestone. The soil partakes more or less of this calcareous character as well as the water which permeates it or comes to the surface. Beds of tufa sometimes form around the openings of springs. Iron is also present, giving to clays and sands a yellowish color, or staining the rocks over which the water flows. Deposits of impure bog ore are sometimes made in marshy ground, around the openings of springs, usually combined with tufaceous matter. Mounds are in this way built up which gradually raise the outlet of the water above the general level so that it flows from a little hillock. One in the valley of Thorn Creek has a height sufficient to operate a hydraulic ram placed at its base in the stream that runs down its slope, its power being thus utilized to force the water of the spring up to a neighboring farm-house.

The till provides the mineral ingredients of the greater part of the soil. Only from pure sand will it be absent. Since the surface covering varies from sand to a quite stiff clay about all degrees of mixture are represented. The loamy soils predominate, making a clay loam or a sandy loam according to the preponderance of clay or sand, or to the form and intimacy of the admixture. In forested sections, except where the till is overlaid by sand, the clay soils prevail. Thus present in the soil the roots of plants come into close relations with the till ingredients. Those of herbaceous plants and of small shrubs are chiefly confined to the layer of soil. The higher roots of all plants are imbedded in it, or in the subsoil just beneath. Those of the larger shrubs and of the trees may penetrate the mass of the till, but to a moderate

depth only. As the streams have excavated their beds mainly in the till it is often well exposed along their banks, which are chiefly of this material. Thus any vegetation on such exposures is in close contact with it. In the hilly or morainic area the banks where the streams closely skirt them, or where they bound the flood plains as bluffs, are often high and steep or abruptly sloping. The firmness and compactness of the clay helps in the production and maintenance of this steepness. Some are almost as bare as if cut in the rock. The wash caused by frequent rains, the desiccation during the heat of summer, and the loosening and slipping of the surface due to the frosts of winter aid in the production and continuance of this bareness. Under these adverse conditions plants have to struggle to retain their hold even after one has been obtained. Xerophytic and semixerophytic habitats are thus brought into close relationship to surrounding mesophytic conditions of forest or meadow.

Limestone Outcrops

Since the Niagara Limestone underlies the entire region, where it has outcrops or comes near enough to the surface, the stream may cut down to it or cut a channel in the rock. Usually it provides them with little more than a rock bottom, the sides of the excavation scarcely rising above the ordinary stage of water. Examples of this are seen in the Des Plaines River, in Thorn Creek at Thornton and Glenwood, in Hickory Creek at New Lenox, in Long Run in the lower part of its course, in streams of the Sag for a mile or two before the Des Plaines is reached. One or two of the smaller streams have cut deep enough into the rock as they near the Des Plaines to have low cliff-like or precipitous borders, as seen in Fraction Run at Lockport, in the brook which forms the narrow gorge of Delaney's Ravine at Sag Bridge, and in one across the river from Lemont, with a gorge that has a low waterfall at its lower end. Though the Des Plaines has a rock floor most of the way from the Sag to Joliet and above this in the vicinity of Lyons, the rock cutting made by the present stream is shallow. Some cliff-like exposures not buried

in the drift of the glacial epoch show the work of the ice of the glacier and of the larger volume of water that passed through the outlet of the Glacial Lake Chicago. Such are those west of the Des Plaines at Lemont, those below Lockport and a mile or more above that place, where for nearly a quarter of a mile is an outcrop with a vertical face of about 20 feet where highest, the most massive of any in the region.

Floristic Aspects

Though the region has no very striking scenic features, it shows considerable diversity in its floristic aspects. The forest and prairie, the areas of sand, marsh and swamp, the shallow lakes, ponds and sloughs are brought into close relations with each other. None are continuously of large areal extent. A day's walk will bring under observation a varied set of conditions in which most of the factors may be seen in some form. This diversity joined to proximity leads to a mixture of plant societies as they are ordinarily characterized by habitats, so that their delimitation is not, in general, an easy matter. No effort is made to be exhaustive in this report. Such general aspects of the flora and of plant distribution will be brought out as are deemed most characteristic and instructive.

Distribution of the Oaks

The dominant forest trees of the region are the oaks, making the bulk of the timber, probably four-fifths of all represented. They are in all wooded localities not too wet, where they are replaced by species of elm, ash, willow, cottonwood, silver maple, or other wet or lowland kinds. Nine species are included, namely, white, bur, swamp white, western chestnut,[1] red, black, Hill's, pin and shingle oaks (Quercus alba, Q. macrocarpa, Q. bicolor, Q. Muhlenbergii, Q. rubra, Q.velutina, Q. ellipsoidalis, Q. palustris,

[1]According to Dr. Trelease, the scarlet oak (Q. coccinea) is not found west of the Alleghany foothills. The observations of the author of *The Flora* agree with this conclusion. All so-called scarlet oaks appear to be Q. ellipsoidalis.

and Q. imbricaria). The majority occur throughout but in varied proportions. A species rarely forms a pure stand over a limited area, but is commonly mixed with others that can bear the same conditions. As an illustration of this all but one of the nine species named are found on Mount Forest Island. I have not met with Q. palustris there, although the soil is wet enough in places to admit it. But this species is more restricted in range than most of the oaks of our flora, being found in but one or two localities north of Chicago, and occurring in the south part of the district eastward from Thornton and Glenwood. The swamp white oak (Q. bicolor) a denizen of wet or swampy ground, finds such conditions on moraine hills where shallow basins or kettle-holes retain sufficient water to make a small pond or pool, or wet enough to form a sedgy locality. This oak may fringe their borders or occupy the swampy space, the sole representative of the oaks. Only a little distance away the ground becomes dry enough for almost any of the remaining species. The shingle oak (Q. imbricaria) is limited to the southern part of the area, rarely if at all appearing north of Mount Forest Island. The chestnut oak (Q. Muhlenbergii) is also mostly of southern range.

All of the oaks found on the Valparaiso Moraine are likewise represented on the Chicago Plain, even in its sandy parts or where the hill is covered with sand. The one most scarce is Q. imbricaria. The dominant oak of the sand region is the black oak (Q. velutina). Next in abundance and quite generally distributed are the bur oak (Q. macrocarpa) and the white oak (Q. alba). The Hill's oak (Q. ellipsoidalis) is sometimes well represented in some localities of the sand region, and the red oak (Q. rubra) occasionally occurs, but their usual habitats in the Chicago Plain are the drier portions of the clayey ground, or if on sandy ground, commonly where the soil is richer. The section with the greatest mixture of oaks in the sand region is the northwestern corner of Indiana, from the state line of Illinois to Whiting. The ground being somewhat richer is more favorable to the growth of trees more characteristic of the soil of the till, such as the shag-bark hickory (Carya ovata), the Hackberry (Celtis occidentalis), and



WOODRUFF

IN THE PALOS PARK COUNTRY

THE FOREST IS MADE UP OF OAKS, HICKORY, HARD MAPLE

the tulip tree (Liriodendron Tulipifera). In wet places the swamp white oak comes in and in the drier, the chestnut oak, along with the red, Hill's, black, white, and bur oaks. This was the case before the trees were destroyed by the encroachments of railroads, and the grounds were taken for the sites of factories and towns. Occasional cases of their occurrence may probably be found in localities yet unchanged. The northern pin oak or Hill's oak (Q. ellipsoidalis) is rarely seen north of the Grand Calumet and the shingle oak not at all. The latter is found in the sandy region east of Dyer, where the pin oak (Q. palustris) is frequent and the northern pin oak abundant in places, as well as along the border of the Little Calumet bottom. The pin oak in the sand region is commonly associated in its ground flora with ericaceous shrubs such as blueberries (Vaccinium pennsylvanicum, V. vacillans) and huckleberries (Gaylussacia baccata), or with species of Sphagnum or peat moss, that do not always require the wettest conditions, such as Sphagnum compactum DC. The ground in such localities is more or less peaty, or the sand is mixed with peat. Hill's oak may also be found in similar habitats but usually takes to drier ground, though in the sand associated with the ericaceous shrubs.

The distribution of the oaks in the timbered areas of the clayey ground, though always with the species more or less commingled where the more valuable kinds have not been cut down for use, is somewhat different. On ground of this character the preponderance is with the bur, the white, the red, and in limited localities, the northern pin oak. Any one of these may dominate in a definite but usually restricted area, giving its character to the oak forest, the red oak with a preference for hill slopes and the contiguity of streams and ravines among the hills. The black oak is dispersed throughout, but more common on the drier hills, where the Hill's oak is likely to be best represented. The shingle oak is more frequent on the south side of the Valparaiso Moraine, being frequent in the towns of Frankfort, New Lenox, Homer, and Lockport, due in part, doubtless, to its more southern range, since it reaches its northern limits for this latitude within this region. The swamp white oak is met with throughout in stations

similar to those already mentioned for Mount Forest, and in larger swampy areas and the bottom lands of water courses, but never of much extent.

Less Common Trees

The shell-bark hickory is commonly associated with the oaks on the boulder clay. The bitternut hickory (Carya cordiformis) is as widely disseminated, but less abundant, though it sometimes forms considerable groves in richer woodlands or the valleys of streams. In similar localities the butternut (Juglans cinerea) is sparingly represented and the black walnut (J. nigra) quite frequently. It was formerly abundant in some of the woodlands drained by Hickory Creek and its affluents, making it of commercial importance. This led to its cutting and diminution. As it is a tree of rather rapid growth it still occurs most abundantly in the southwestern part of the district. The sugar maple (Acer saccharum) is mostly restricted to the moraine region, where it is found throughout in varying quantities. As a denizen of richer woods it belongs to the highest type of forest covering. It is seen most frequently on the slopes of hills, especially on those contiguous to streams or in their valleys, when they are not swampy. The black maple (A. saccharum var. nigrum) is apt to be found with it in any locality, but in some parts, as the vicinity of Hickory Creek, may exceed the common form. A fine display of maples, mostly of the variety, some of large size, is seen on the camp grounds of the Methodist Episcopal Church at New Lenox. Scattered throughout but nowhere common are the basswood (Tilia americana) and the black cherry (Prunus serotina), mainly on the till but sometimes on the sand or gravel. Fringing the banks of streams the hackberry should be mentioned.

Where the ground is wet or swampy and on bottomlands, the most abundant trees are the white elm (Ulmus americana), the silver-leaf maple (Acer saccharinum), the red ash (Fraxinus pennsylvanica), the green ash (F. pennsylvanica var. lanceolatum), the cottonwood (Populus deltoides), the black willow (Salix

nigra) and the peach-leaved willow (S. amygdaloides). The white ash (F. americana) and the slippery elm (U. fulva) not as common as the white elm, take to less wet but usually moist rich ground. The cork elm (U. racemosa) is found on an island in the Des Plaines River at Romeo, associated principally with the white elm, slippery elm, hackberry, and the red and green ash. A comparatively thin coating of earth here covers the limestone, in which are springs and channels cut by the river in times of overflow.

Trees of the Chicago Plain

Nearly all of these trees occur on the Chicago Plain, the most of them also in a comparatively limited part of it, the eastern portion of Hyde Park and Thornton and the adjoining part of Lake County, Indiana, as far as Whiting and East Chicago, beyond which to the eastward the trees of the sand region are predominant. It is the district of shallow lakes, ponds, and sloughs, separated from each other by low sandy or gravelly ridges, on which the trees are mainly found. East of this district, between the Grand Calumet and Lake Michigan, and southward to the Little Calumet and beyond, the floristic features partake more of the characters seen in the dune areas, both on the numerous beachlets of the receding Lake Chicago, or of the present lake when more extended, and in the narrow sloughs which run parallel with them. The entire section forms a floristic borderland between the grass and tree covered parts of the till area and the more marked and proper dune region with its fixed and movable sand hills. Consequently the flora is very much mixed and of a composite character, sharing in that of the prairie and forest of the morainic or predominantly clay area, and that of the sand hills. It is a condition much less obvious at present than it was twenty-five or thirty years ago, before the encroachments of business had wrought such great changes in it. Species of plants more favored in the till-forest or prairie on the one hand, or on the other by the dunes, meet in these bounds. The struggle among them usually hinged on varying amounts of

moisture, evaporation, fertility of soil, light, and similar factors that enter into the lives of plants, resulting in some advantage to those which produced the mixture.

Trees of Low Dune and Swampy Area of Sand-Region

When I began to study the flora of this region in 1875 the white pine (Pinus Strobus) and the gray or northern scrub-pine (P. Banksiana) came as far west as Whiting, the latter keeping at its western limit near the shore of Lake Michigan, the former going as far south as the present site of East Chicago. South of the Grand Calumet they appeared again in the vicinity of Clarke and Tolleston, extending eastward from there in the sands north of the valley of the Little Calumet. South of this river I have not met with any native pines within the limits of the former Lake Chicago. There is every probability that they once flourished there as well as west of Whiting, but had been supplanted by the oaks, just as they are now gradually giving way to them throughout the sand region. That the white pines and tulip trees were in size and abundance sufficient for profitable cutting is evident from the location of a saw-mill at Casello, a former station on the Fort Wayne railroad within the present bounds of Indiana Harbor, and by the log-ways in the swamps. The mill was burned in the forest fires of 1871 that swept over this section. The gray pine, generally mixed with oaks and the common juniper (Juniperus communis var. depressa) sparsely covered the sand ridges. The white pine took to moister or swampy areas or where the soil was richer, or was associated with the gray pine and the oaks on the ridges. The sloughs were commonly bordered by the white cedar (Thuja occidentalis) and the paper birch (Betula alba var. papyrifera), giving to them, when long, straight, and narrow, the appearance of avenues. The red cedar (Juniperus virginiana) was less frequent, but sometimes made little groves or thickets of small trees. The tulip tree was quite well represented about Berry Lake, and occurred east in the vicinity of Clarke. The chestnut oak has already been mentioned. As late as 1892 I measured one just east of Berry Lake

that had a diameter of three feet. Some of this area was provided with a richer soil, as could be seen, not only by the trees growing on it, but also by the plants of the forest floor, the majority being like those in woodlands on the boulder clay, but associated with some of the dune plants. The largest area most fully occupied by the white pine, in places almost a pure stand, was the swampy land now embraced by Indiana Harbor, East Chicago, and the neighboring grounds. The gray pine increased in quantity eastward to the vicinity of Gary, as may still be seen by the dilapidated remnants of this forest along the railways. The largest nearly pure stand of this tree, resembling a northern gray pine forest, bordered Lake Michigan just west of the present location of Gary. An oak now and then appeared in it, but on going southward and eastward, except in spots close by the shore, the oaks generally became the dominant trees.

Mixed Flora of Low Sand Ridges or Dunes

On the low sand ridges that separated the sloughs there was generally an open growth of trees freely admitting the light. Here the herbaceous vegetation was a mixture of the sand-hills and the prairie-grass formations. Some of these are given as chiefly characteristic. To mention all would be an enumeration of a large part of the flora of the dry and moist sands of the dune region. The more or less common or abundant dune plants of the dry sands were—

Awn grass (Aristida tuberculosa)
Cyperi (Cyperus Schweinitzii)
Cyperi (Cyperus filiculmis)
Hair sedge (Stenophyllus)
Chestnut sedge (Fimbristylis)
Sedges (Carex pennsylvanica)
Sedges (Carex Richardsoni)
Sedges (Carex umbellata)
Sedges (Carex varia)
Sedges (Carex eburnea)
Sand cress (Arabis lyrata)
Lupine (Lupinus perennis)
False dandelion (Krigia virginica)
Foxglove (Gerardia pedicularia)
Golden rods (Solidago racemosa var. Gillmani)
Golden rods (Solidago speciosa var. arguta)
Goat's rue (Trephrosia virginiana)
Bush clover (Lespedeza capitata)
Purple milkwort (polygala polygama)
Pinweed (Lechea Leggettii)
Rockrose (Helianthemum canadense)
Bird foot violet (Viola pedata)
Butterfly weed (Asclepias tuberosa)
Red phlox (Phlox pilosa)
Puccoon (Lithospermum Gmelini)
Small skullcap (Scutellaria parvula)
Sand bergamot (Monarda punctata)
Stiff aster (Aster ptarmicoides)
Spreading sunflower (Helianthus divaricatus)

Where the sands were moister appeared such plants as—

Nut sedges (Scleria triglomerata)
Nut sedges (Scleria verticillata)
Sedges (Carex Crawei)
Sedges (Carex Oederi var. pumila)
Colic root (Aletris farinosa)
Pogonia (Pogonia ophioglossoides)
Milkworts (Polygala sanguinea)
Milkworts (Polygala cruciata)
Blue hearts (Buchnera americana)
Purple foxgloves (Gerardia purpurea)
Purple foxgloves (Gerardia tenuifolia)
Coreopsis (Coreopsis lanceolata)

Growing with the above are species generally more characteristic of the prairie flora, either moist or dry. Among the most common of these may be named—

Blue joint (Andropogon furcatus)
Bunch grass (Andropogon scoparius)
Tall oat grass (Sorghastrum nutans)
Panic grasses (Panicum virgatum)
Panic grasses (Panicum Scribnerianum)
Porcupine grass (Stipa spartea)
Crested grass (Koeleria cristata)
Early bunch grass (Sphenopholis obtusata)
Eaton's grass (Sphenopholis pallens)
Spike rushes (Eleocharis tenuis)
Spike rushes (Eleocharis acuminata)
Scirpus (Scirpus lineatus)
Beak sedge (Rynchospora glomerata)
Sedges (Carex scoparia)
Sedges (Carex straminea)
Sedges (Carex Muhlenbergii)
Sedges (Carex vulpinoidea)
Sedges (Carex aurea)
Sedges (Carex gracillima)
Sedges (Carex tetanica)
Wild onions (Allium canadense)
Wild onions (Allium cernuum)
White lady's slipper (Cypripedium candidum)
White fringed orchis (Habenaria leucophaea)
Beautiful beard (Calopogon pulchellus)
Ladies' tresses (Spiranthes cernua)
False toadflax (Comandra umbellata)
Lead plant (Amorpha canescens)
Spurge (Euphorbia corollata)
Rough gentian (Gentiana puberula)
Puccoon (Lithospermum canescens)
Lion's curl (Physostegia virginiana)
Sand calamint (Satureja glabra)
Paint brush (Castilleja coccinea)
Bluets (Houstonia caerulea)
Blazing stars (Liatris cylindracea)
Blazing stars (Liatris spicata)
Blazing stars (Liatris scariosa)
Golden rods (Solidago nemoralis)
Golden rods (Solidago ohioensis)
Golden rods (Solidago Riddellii)
Cynthia (Krigia amplexicaulis)
Black-eyed Susan (Rudbeckia hirta)
Sunflower (Helianthus occidentalis)
Golden ragwort (Senecio Balsamitae)
Hill's thistle (Cirsium Hillii)
Cone flower (Lepachys pinnata)
Coreopsis (Coreopsis palmata)
Asters (Aster azureus)
Asters (Aster multiflorus)
Asters (Aster ericoides)
Asters (Aster linearifolius)

The flora of the strand and of the low dune bordering Lake Michigan between Gary and Chicago, as far as left intact, does not essentially differ from that farther to the east within the limits of the high dunes. The cottonwood is more frequent and generally reaches a larger size where the dune is low, on account of the better facilities for germination and maintaining its place, the near presence of water on the landward side contributing

materially to this. Being naturally a tree of low or moist ground, characteristic of bottom-lands along water-courses, it gains a foothold by the shore of the lake where its roots reach the moisture constant near the lake table. Its appearance of growing on a dune is due to a heaping up of sand around its trunk as it reaches upward, thus partly burying it. Adventitious roots, as in the case of willows and dogwoods under like conditions, are thrown out from the buried stem where the moisture is sufficient to induce them. Only by a kind of euphemism can the cottonwood be called a proper dune plant, useful as it is in fixing the sands along the beach. The balsam poplar (Populus balsamifera) sometimes takes its place by the lake shore, more especially within the limits of Hyde Park, occurring also farther inland as a native tree in the bottomland of Thorn Creek south of Chicago Heights.

The Native Willows

All the native willows of the Chicago district occur in the sand region, in one locality within very narrow limits. I have found every species represented in a strip about half a mile wide and barely four miles long. It is on the west side of Wolf Lake, beginning at the shore of Lake Michigan and extending a little south of Hegewisch, or to the northern border of the towns of Hammond and Thornton. Sand willow (Salix syrticola) is confined to the shore of Lake Michigan, a dune species, smooth willow (S. glaucophylla) is abundant, and shining willow (S. lucida), and long-leaved willow (S. longifolia) are well represented but not limited to the shore of the lake. Pussy willow (S. discolor) and heart-leaved willow (S. cordata) are met with throughout the strip under conditions suitable for their growth. Black and peach willows (S. nigra and S. amygdaloides) are by the border of Wolf Lake or in wet woods; bog willow and myrtle willow (S. candida and S. pedicellaris) are in the boggy grounds east of Hegewisch where they are associated, as usual where they occur elsewhere, with the dwarf birch (Betula pumila). Bebb's willow (S. rostrata) forms thickets in the moist sands south of Wolf Lake. The prairie willow (S. humilis) and the dwarf gray willow

(S. tristis) appear on the dry sand ridges almost anywhere in open or lightly shaded stations, the former usually more abundant. These willows sometimes hybridize, producing forms very puzzling to identify. Stalked willow (S. petiolaris) is common in the southern part of the strip, abounding from Hammond eastward to Clarke and beyond along the margins of sloughs. Of these willows S. syrticola, S. candida, and S. pedicellaris are confined to the sand region and the intervening bogs and sloughs. S. rostrata, S. glaucophylla, and S. petiolaris are thus limited in the main. The others are more widely disseminated where the conditions they respectively need for growth are provided. S. nigra, easily confounded with its near relative S. amygdaloides, seems to prefer the immediate banks of streams or seeks contiguity with water, while the latter spreads away from them and appears in moist woods or scattered in wetter parts of fields, thus becoming the more common of the two and apparently able to bear with drier conditions. S. longifolia grows in especial abundance by the streams whose overflow deposits sand or gravel, springing up quickly in such spots, and, spreading rapidly by its subterranean parts, binds the loose material, thus becoming of importance in "made lands." S. tristis scarcely occurs outside of the Chicago Plain, while S. humilis, once common on dry upland prairies of the till region, is now within their bounds limited mostly to grassy open spaces of woods, wood-borders and neglected pastures, owing to the appropriation of the prairie to farming purposes.

Aquatic Plants

The aquatic vegetation, either where water remains throughout the year or only for a season, does not vary materially whether the slough is underlaid by sand or boulder clay. The muddy or peaty bottom, as the case may be, charged with organic matter provides a soil in which plants root comparatively indifferent to what lies beneath it. Shallower basins where sand is more in evidence may show a preponderance of sand-loving species. It may be more slimy when it is in the till, more peaty or sandy in the sand region. Since grasses and sedges form the mass of such vegetation, to give the societies that are found would almost

require the naming of all the species represented in the flora of the region by plants requiring such conditions. The vast majority or mass of aquatic vegetation is made up of monocotyls. All are not equally common in all stations of this kind or in all sections of the region where they may be found, or grow more or less commingled. Some species, like those of Typha, Scirpus, Eriophorum, and Cladium, grasses such as Zizania aquatica and Calamagrostis canadensis, sedges like Carex aquatilis, C. riparia, C. crinita, C. stricta, and C. filiformis, frequently take up limited areas almost exclusively, forming nearly or quite pure stands. As potent factors in affecting their distribution in this manner may be named depth and constancy in the supply of water, power of competing with other plants and driving out those less favored by a vigorous or matted system of roots and subterranean or stoloniferous stems, by means of which they are insured a dense growth.

Pondweeds and Allied Aquatics

The section with shallow lakes and ponds at the south end of Lake Michigan is very rich in Najadaceae, or pondweeds. Here they have conditions most congenial for their growth. From Clarke and Pine to Calumet Lake all but two of the Potamogeton species of our local flora are found. These are Potamogeton praelongus, which occurs in the Des Plaines River and also in Cedar Lake, Indiana, and P. hybridus which grows in Goose Pond near Dune Park, and in the lakes of La Porte, just east of our range. These two I have not seen in this section nor found them reported by others. Besides I know of but three more growing within sixty miles from Chicago not represented in this limited area. They are P. alpinus Balbis, P. Vaseyi Robbins and P. dimorphus Raf., given in Patterson's Catalogue of the Plants of Illinois for McHenry County, on the authority of Dr. Vasey. A hybrid of one of these, P. americanus x P. alpinus occurs in this section, originally described by Arthur Bennett from specimens growing in a railway ditch south of Stony Island. The first member of the cross grows plentifully in the region, but the second has not yet been found. Of the remaining pondweeds I

have not seen P. pulcher west of the road between Clarke and Pine. It is in ponds and ditches to the east of that locality. Nearly all of the rest, perhaps all, can be found in Wolf Lake or have been represented there. All but two I have at some time collected or noted as growing in its waters. It shows the richness of this comparatively small body of water in this genus of pondweeds. It abounds in Najadaceae, several of which are likewise common in the neighboring lakes and ponds and in the Calumet River. Those found in Wolf Lake in varying degrees of plentifulness were P. natans, P. americanus, P. amplifolius, P. heterophyllus, P. lucens, P. Richardsonii, P. zosterifolius, P. Friesii, P. strictifolius, P. pusillus, P. foliosus, P. pectinatus, P. interruptus, and its var. scoparius, and P. Robbinsii. Potamogeton angustifolius I have collected near by in Lake George. One species has been introduced, probably since 1900, as I examined the lake that year and the following very closely for its aquatics. This is P. crispus, a native of Europe but well naturalized in the eastern states. Associated with the species of Potamogeton and equally abundant in their respective places of growth, are two more of the pondweed family, horned pondweed (Zannichellia palustris) and Naias (Najas flexilis). If we add to these Elodea (Elodea canadensis), eel grass (Vallisneria spiralis), and water star-grass (Heteranthera dubia) we have about all of the monocotyledonous aquatics with immersed or floating stems common in the region and growing in this lake. In deeper and more constant water like that of the Des Plaines River and Thorn and Hickory creeks species of pondweed, like P. americanus, P. amplifolius, P. Richardsonii, and P. pectinatus are generally most abundant.

Growing in situations similar to those of the pondweeds, but more habitually by the margins of ponds and streams where the water is generally quiet may be mentioned bur-reeds (Sparganium eurycarpum, S. americanum and its var. androcladum), arrowheads (Sagittaria latifolia with its numerous varieties and forms, S. heterophylla, and S. graminea). These partially immersed aquatics often form dense and extensive patches.

The greater part of these aquatics are of general distribution throughout the district where proper conditions for their growth

occur. The pondweed most frequently found is Potamogeton foliosus, since it can flourish in very shallow pools and small streams or where there is stagnant or gently flowing water, and where it often forms dense beds. P. heterophyllus is likewise of wide distribution, more apt to be in streams where it roots in the muddy bottom, often persisting in the mud as a terrestrial form when the water has dried away along their margins, the stems much reduced in length, sometimes to a decimeter or less.

Dicotyledonous Aquatics

Of aquatic dicotyls some occur throughout the region though usually more abundantly near Lake Michigan, since the draining of land for cultivation has elsewhere had more effect upon them. The most noteworthy among them are water heart's-ease (Polygonum amphibium), hornwort (Ceratophyllum demersum), yellow pond lily (Nymphaea advena), water lily (Castalia tuberosa), water shield (Brasenia Schreberi), water crowfoots (Ranunculus aquatilis var. capillaris and R. delphinifolius), starwort (Callitriche heterophylla), water milfoils (Myriophyllum spicatum, M. verticillatum var. pectinatum, M. heterophyllum), mermaid weed (Proserpinaca palustris), and bladderwort (Utricularia vulgaris var. americana). To be classed with these is American lotus (Nelumbo lutea), a species of restricted range, being confined to the Calumet River and Calumet Lake. It has become quite scarce, due among other causes to the constant picking of the blossoms for selling to florists and other buyers. Always far less abundant than the white water lily and probably less able to resist destruction by spoliation, it is likely to become extinct if not protected.[1] The use of the Calumet River for navigation would hardly permit its preservation there. It was once common in the river at Dolton and in the Grand Calumet where Gary is now located, and may still be found between Clarke and East Chicago. Should Calumet Lake become a part of the park system of Chicago there would be a better chance for its increase and perpetuation.

[1]It is probably now extinct in the Chicago Area though abundant in Grass Lake, fifty miles northwest of Chicago—H. S. P. 1926.

Floristic Features of the Parallel Sloughs and Ponds North of the Tolleston Beach

The sloughs, ponds, and shallow lakes of this district north of the Grand Calumet and west of Gary, or generally within the bounds of Tolleston Beach, where they were left to themselves to fill up gradually by the decay of vegetation and by the inblowing of sand, were not, when this stage of advancement was reached, of the Sphagnum bog type. Only exceptionally did they show the succession of societies characteristic of that type from deeper water aquatics through sedges, grasses, and Sphagnum to moist and finally dry conditions of the adjoining sand flora. On the contrary they mostly or prevailingly passed through the swampy stages that mark similar localities in the prairie region where sedges and aquatic grasses supervene before the dry meadow stage is reached, where Sphagnum does not occur but is replaced by mosses of the hypnoid type, more capable of growing readily at the base of grasses and sedges in deep shade. East of Tolleston and Miller and south of the Little Calumet within the bounds of the Glacial Lake Chicago from Thornton and Glenwood eastward to Michigan City and beyond, the Sphagnum-bog type, from examples still available for study and comparison, apparently prevailed. This is especially true of ponds among the higher sand hills which are slowly filling up and in many of which Sphagnum abounds over large areas or comes in along their borders. Of about sixteen species of Sphagnum that I have detected, from the vicinity of the Des Plaines River southwest of Berwyn to the neighborhood of Michigan City, all but one or two are in the region from Thornton eastward, much the larger part east of Miller. Where found elsewhere they are scattered or of limited extent. One is struck by their general absence or scarcity in the district north of the Grand Calumet. Examples occur but they played no important rôle in the floral associations and successions. There were other evidences of this like the general absence of leather leaf (Chamaedaphne calyculata), blueberries (Vaccinium corymbosum), and cranberries (V. macrocarpon) which as peat plants are usually found at some stage in the formation of bogs

where Sphagnum prevails. Spots of these might be met with but they were of limited extent, even where such peat-bog plants as the pitcher-plant and the pink lady's slipper (Cypripedium hirsutum) were common. But these grew in the wet sands as readily as in bogs, as well as examples of the cranberry, the cypripedium even more frequent or abundant in the sands. Where the areas had progressed so far towards the meadow conditions that plants of the wet prairie came in among the grasses and sedges, the presence of marsh fern (Aspidium Thelypteris), wool grass (Scirpus lineatus), swamp golden rods (Solidago ohioensis and S. Riddellii), bur marigold (Bidens trichosperma), golden ragworts (Senecio aureus and S. Balsamitae) showed the same tendency. These statements are based on conditions that have become largely historical, known and observed for several years after first visiting the region in 1875, conditions that are now much changed or entirely obliterated.

One cause of this was the better drainage for the long narrow sloughs and ponds which ran parallel with each other and with the shore of Lake Michigan east of Whiting. At their western end they met or became merged with those which had a more north and south direction with outlets to Lake Michigan or to the shallow lakes or to the Grand Calumet. When the water was sufficiently high there was a perceptible current where they were narrow or were crossed by a path or sandy road which was apt to be washed out by overflow of water. This condition became more emphatic when the Calumet River was dredged and deepened to make the harbor at South Chicago, and when the lakes were connected by ditches. Such were not favorable for the growth of Sphagnum and the formation of peat bogs, as may be seen by comparison with the enclosed ponds and swampy basins among the sand hills of the dune region farther east, most of which have no escape for water but by evaporation or by seeping through the sand. These narrow sloughs and ponds were separated from each other by low parallel sand ridges generally considerably wider than the water areas. More than thirty of these have been counted in some places, probably the successive shores of the receding lake. Where the ridges met the water of the sloughs they usually had sides rather abruptly sloping, the

abruptness at the water's edge generally greater on its north side, and the water was about as deep by the margin as in the middle. This gave but little opportunity for bog formation at their edges. Some grasses and sedges were present but almost in contact with them were the wet ground shrubs which lined their borders. These were mainly spiraeas (Spiraea tomentosa, S. salicifolia), Carolina rose (Rosa carolina), marsh cinquefoil (Potentilla fruticosa), choke berries (Pyrus arbutifolia, P. melanocarpa), alder buckthorn (Rhamnus alnifolia) and mountain holly (Ilex verticillata). The shrubs were frequently associated with species of ferns (Osmunda) and were quite abruptly succeeded by the shrubs and trees of drier sands, like the paper birch, the arbor vitae, and the white pine. The ponds were generally clear, often with a dense mat of Chara or Nitella at the bottom and many with countless water lilies or Brasenia Schreberi. Others with more sandy bottoms had the water lilies less fully represented or wholly absent, as well as most vegetation except Chara and Nitella and the pondweeds. When more shelving toward the border, plants that inhabit muddy sands or shallow ponds that dry up in summer made their appearance. Good representatives of such are Triglochin maritima, various Sedges (Cyperus diandrus, C. rivularis, C. aristatus, C. Engelmanni, C. strigosus, Eleocharis olivacea, E. acicularis, E. capitata var. dispar, Scirpus debilis, Hemicarpha micrantha, Carex Oederi), rushes (Juncus Balticus var. litoralis, J. pelocarpus), yellow water crowfoot (Ranunculus delphinifolius var. terrestris), mud purslane (Ludwigia palustris), and bladderworts (Utricularia cornuta, U. gibba, U. resupinata). All of the bladderworts of our flora could be found in these sloughs or in shallow pools between Whiting and Pine, there being, besides those just mentioned, U. purpurea, U. vulgaris var. americana, U. minor, and U. intermedia.

The Rock Flora

The outcrops of rock in the Chicago region furnish no exclusively rock plants but lichens, liverworts, mosses and ferns, the last of which are only to be noted here. As represented in the

published flora there are five species of rock ferns along the Des Plaines and its tributaries; walking fern (Camptosorus rhizophyllus), rock brakes (Pellaea atropurpurea, and Cryptogramma Stelleri), Woodsia (Woodsia obtusa), and bulb fern (Cystopteris bulbifera). The last may not be confined to rocks, since it is not always so limited, but as far as I am aware is so in our area. Growing on the rocks quite frequently are species of bank cresses (Arabis) such as A. hirsuta and A. laevigata, but they are also found in dry rocky places or even dry hard clay or till. Bluebells (Campanula rotundifolia) and alum root (Heuchera hispida) are frequent on the shelves or in crevices of the rocks but are also found in sandy or dry localities elsewhere. Other plants which grow in the vicinity of the outcrops come in when enough soil is washed down from above or blown in by winds, or formed by disintegrating agencies and the decay of prior vegetation. Seeds finding a lodgment may germinate and the plants obtain a foothold, so that any capable of growing under such conditions may be expected.

The relation of plants to the mineral or chemical constituents of the soil in which they root is one of which different views are taken. Some place much stress upon it, others claim that the physical character or structure of the soil is more important provided that it contains all the ingredients essential to the plant that can be taken in by the roots. So they are designated as calcareous or non-calcareous, siliceous or non-siliceous, or by similar terms. Examples of such occur in the region. Reference is had more especially to those found in quite close connection with calcareous rocks or where the ground is well supplied with imbedded fragments derived from such rocks in the immediate neighborhood. Since the ground moraine is, as already stated, well furnished with calcareous particles, in a sense this might apply to any growing on it. An example of such a plant is large mouse-ear (Cerastium arvense var. oblongifolium). It is said to show a preference for magnesian rocks like serpentine. It occurs on the rocks near Lockport, those of Niagara limestone more or less magnesian in composition. I had previously found it on rocks of this character along the Kankakee River in this state, so

that in this respect it might bear out the contention. The ferns, Pellaea atropurpurea, Cryptogramma Stelleri, Cystopteris bulbifera, and Camptosorus rhizophyllus, which are said to grow upon or to prefer calcareous rocks, can have no others in the region on which they could possibly be found. In its distribution in this region broad chickweed (Arenaria patula) may be placed under this head. The stations east of Grand Crossing, by an old quarry on Stony Island where it is abundant still, along the Des Plaines at Romeo and Joilet, and doubtless in other localities are on the thin soil overlying the rocks or on ground full of limestone fragments. The hairy beard-tongue (Pentstemon hirsutus), Ruellia (Ruellia ciliosa), and rough pennyroyal (Hedeoma hispida) I find always in similar stations though they may be merely examples of plants growing on dry ground that happens to be rocky also. Cases of this character may be worthy of record as showing at least their distribution in the region. I will add that having collected and studied the mosses of the district quite extensively, especially in their soil relations, the evidence or preference for calcareous or silicious conditions as given in works on bryology is not conclusive.

Distribution of Crataegus or Hawthorns

In this connection the hawthorns (Crataegi) may be considered, since they are said to abound on calcareous land. This contention holds true in the region about Chicago. Their abundance is seen in woods and fields of the Valparaiso Moraine and along the Des Plaines Valley. Where they occur in the Chicago Plain it is almost wholly on ground moriane, the sandy parts being provided with very few and these mostly at their borders. In the sand region east of Whiting one rarely meets with a Crataegus. West of there and south of the Little Calumet they become occasional, and this in the richer parts. Crataegus Crus-galli, C. punctata, C. mollis, and C. sera are the usual kinds. This section between the Grand Calumet and the lake is the one already mentioned as forested more like that of the moraine, with its chestnut oak, hickory, ash, and hackberry which are rarely seen east of Whiting.

South of the Calumet River where the ridges and valleys alternate and the ground moraine appears more in the valleys, when not peaty the woods and wood borders have some hawthorns. So also the banks of streams that come down from the moraine and flow into the Calumet, with the lower part of their courses in the Chicago Plain, bear thorns, sometimes quite abundantly especially along their clayey banks. But during the six or seven years of somewhat extensive study of species of Crataegus in the Chicago area extending from Chicago Heights and Glenwood to Wauconda and Waukegan, almost all the varied forms came from the Valparaiso and lake-border moraines or the limestone area of the Des Plaines and of streams entering it south of the moraine. East of Deep River and Salt Creek in Indiana the thorns appear again in plenty, making a part of the trees and shrubs where the land takes on the characteristics of clay or clay loam soil. The dune region is virtually passed over, and that of low sand areas is only sparsely represented in the distribution of Crataegus. It is evident that in this region the sand is avoided whatever may be its preference for soils of a non-siliceous nature.

Species Rare or Local

Cryptogramma Stelleri, Lemont and Sag Bridge.
Woodsia obtusa, Lemont.
Ophioglossum vulgatum, Wolf Lake and Gary, Ind.
Potamogeton pulcher, Pine, Ind.
P. strictifolius, Wolf Lake.
Cyperus flavescens, Pine, Ind.
C. acuminatus, Lockport.
Eleocharis quadrangulata, Wolf Lake.
Carex siccata, Gary, Ind.
Carex longirostris, Lockport.
Ulmus racemosa, Romeo, Ill.
Polygala pauciflora, Homewood, Auburn Park.
Aesculus glabra, Chicago Heights.
Napaea dioica, Will County.
Dirca palustris, Lemont, Lockport.
Gaura parviflora, Lockport.
Ipomoea pandurata, Wildwood, Chicago.
Hedeoma hispida, Lockport.
Gratiola sphaerocarpa, Mount Forest.
Utricularia purpurea, Pine.
Coreopsis lanceolata var. villosa, Lockport.

Hybrids

Potamogeton lonchites x alpinus (P. rectifolius), Stony Island (London Journal of Botany. 1902. p. 147).
Quercus imbricaria x velutina (Q. Leana), Willow Springs, Marley.
Quercus coccinea x palustris, Thornton (Botanical Gazette 26: 53. 1898.)

Diminution or Extinction of Species

Some plants once frequent or abundant in certain localities have now become very rare if not extinct. Various causes can be assigned for this. The most effective is the appropriation of the land for industrial purposes either for cultivation or as sites for factories or towns. As land is brought under cultivation or used for pasturage the native flora must necessarily be greatly diminished in area even if the species are not destroyed. This holds true especially of the prairie vegetation. That of the forested sections is not exposed to so great danger, the use for pasturage being the principal. This leads directly to the destruction of such plants as stock will eat, and indirectly by the destruction of shrubs and young trees of the forest floor, thereby thinning the woods, admitting too much light and finally allowing a covering of grass where the woods become very open. The last must result in the destruction of the woodland itself, since, in connection with the cropping by animals of such plants as may start, it inhibits their germination and reproduction, so that as the old trees die no new ones can take their places. But in the case of the plants mainly to be considered the use of the land for industrial purposes has been the chief factor. Reference is had to the southeastern part of Cook County and the northwestern part of Lake County, Indiana, much of which was of an inferior grade for cultivation. This led to the cutting down and removal of the timber, the drainage of the swamps, the filling in of low grounds, and the erection of buildings and the construction of railways. Contributing causes that had worked strongly in the same direction before this state of things were the frequent fires, the frequency increasing as this area became more traversed by the railroads. Often occurring and obviously the worst in time of drought,

they attacked dried-out peaty areas, burning up the soil most congenial to the growth of certain species. Another cause was the too avid gathering of some of the more attractive kinds that had a market value for sale to florists. This was especially the case with species of Cypripedium (lady's slipper) and the fringed gentians. Of the causes mentioned those avoidable must be recognized in the fires and the excessive picking of the flowers. Species would still flourish in some localities where they were once common or frequent were it not for these.

An example of such is the pitcher plant (Sarracenia purpurea). It was once well disseminated through many of the swampy parts of the sand regions east of South Chicago and Hammond. It was very common east of Whiting, growing both in peaty ground and in the wet sand. The odd flowers and especially the curious leaves or pitchers caused their gathering to some extent but probably not especially for sale. Drainage of the land and fires had destroyed most of them before the ground was occupied. The last I chanced to meet with north of the Calumet Valley was in 1898 in a bog north of Tolleston where a few still lingered. I have since seen a little of it in bogs by Deep River east of Liverpool, Indiana.

The case of the showy lady's slipper (Cypripedium hirsutum) is analogous, though the destructive factor of excessive collecting was far more marked. Hundreds could be gathered in a few hours. Those getting them for market brought large basketsful to Chicago and sold to florists, and children collected them in bouquets to sell on trains that might stop at some way station. Though the roots were commonly undisturbed the constant cutting off of the flowers largely prevented the production of seed, and as the old ones died few seedlings could be found to take their place, and their diminution from this cause was marked. From Whiting and Hammond eastward they grew in all favorable localities in the wet sand and bogs and bordering the sloughs, when I first visited the region in 1875 and for some years after. One found them scattered about singly or in groups of fifteen or twenty, sometimes each stem with one or two flowers. They diminished rapidly in number even before the ground was taken

for other purposes. In a note on the walk from the present site of Indiana Harbor to Gary, a distance of about seven miles, made in June, 1894, no examples of it were recorded as seen where it was once so abundant. A few days before when going from East Chicago to Edgemoor by the lake, I saw but one bunch having a half dozen stems. On either trip no yellow lady's slippers (C. parviflorum or C. pubescens) were seen. Some white lady's slippers (C. candidum) were found near Pine. In 1897 a botanical friend who had not seen C. hirsutum growing in its native haunts was taken to a locality between East Chicago and Clarke Junction as the most likely place to find it and a few examples were seen about where Calumet and Graselli now stand. It was the last time I have seen it in the sand region. Some may yet linger in obscure places but if so it is exceedingly rare. The large yellow lady's slipper (C. parviflorum var. pubescens) is still found to some extent, being a plant of wider distribution and more varied in habitat, occurring on wooded banks of the moraine district as well as in the sand region. As it was less sought for sale it doubtless fared better on this account. The small white lady's slipper used to be frequent on some of the wet or boggy prairies both of the Chicago Plain and the moraine region. I have not met with it for many years. Two rein orchids (Habenaria lacera and H. psycodes) though never common in our flora, have about disappeared. The yellow fringed orchis (H. ciliaris) is more persistent and occurs occasionally in goodly number. The fringed gentian (G. crinita) and its near ally G. procera, being likewise gathered for market as well as for home decoration, have met with a fate like that of most of the lady's slippers, being now hard to find or so scarce as to make their collection for sale unprofitable. Gentiana puberula, less attractive but also collected for florists, having a perennial root bore the strain better and though never abundant is still to be found occasionally. There are localities where all such attractive plants would still find congenial conditions for perpetuation even in the surroundings of a populous city if unmolested or but sparingly picked. But too great avidity in picking for home use results in their gradual destruction, being taken by the handful where a small number if any would

suffice. Fortunately one family, the violets, having the cleistogamous mode of propagation, though picked excessively, does not diminish rapidly except one species, V. pedata, which being without this means of perpetuation has suffered in places where it once abounded.

Relations of Soil Conditions to Wooded and Treeless Areas

The region being one made up of prairie and woodland furnishes some lessons on their mutual relations. Both are represented on the highest ground of the Valparaiso Moraine, the prairie as a whole being in excess, the wooded areas being more prevalent on slopes and in the valleys of the streams. From Homer and Orland eastward through Bremen, Frankfort, Rich, Monee, and Will the crest of the moraine is mainly occupied by prairie. Island-like groves are surrounded by prairie and the woods jut out into it in strips of varied width. Or the reverse may be the case, the timbered land enclosing an area of prairie and the latter jutting into the former. The streams, except near their sources in the higher parts of the moraine, are generally bordered by forested tracts which sometimes spread to a considerable distance from their banks, so far at least that the presence and persistence of forest conditions instead of prairie cannot be ascribed to any protection afforded by them in case of fire. Other causes must be sought for this. In case of fire the arborescent tracts were as much exposed as the treeless, though the destruction would be less rapid and probably far less complete than in the case of the lighter covering of the prairie.

Yet one fact is obvious in the relations of the two, the different nature of the soil. That of the prairie is deep black or dark brown, rich in organic matter, easier to till, and more productive. Where trees appear the soil is lighter colored, of less depth, firmer and clayey, harder to till when cleared and brought under cultivation, and less productive. The farmer chooses the former for his cereal crops in case both kinds are represented on his farm, the latter he devotes more to pasturage. It is not difficult

for the experienced eye to detect in this soil character what was originally prairie and what is cleared land. A farm may be entirely of either kind or it may be a part of both, yet an inspection of the soil will almost unfailingly separate the two, even where all evidences of tree or grass conditions previous to cultivation have been obliterated. As the subsoil is the same in both, but nearer the surface in the woodland than in the prairie, the supervening soil must to some extent partake of its elements. Since boulder clay or till characterizes this, it comes to the surface more where the trees are found and forms a greater element in its composition.

Reference here is had to the upland prairie and forests rather than to those of low or swampy tracts. A swampy or sloughy area in the prairie and a timbered swamp in the woodland portion do not show such striking contrasts, the peaty or mucky matter giving greater depth of soil and darker color in the case of both. Yet the wooded swamp is commonly more clayey, more mucky, than the lowland prairie. Whatever may primarily have led to this treeless and timbered condition respectively, in the upland district especially it is evident that the decay of organic matter on the prairie has produced a larger amount of humus in its soil than the decay of such matter in the timbered areas. It is also said to be more peaty in character, containing more ulmic acid than the vegetable mold of the forest soil.

As to the encroaching of the forest on the prairie or the spreading of the trees over the treeless ground under natural conditions I have seen little proof after fifty years of acquaintance with the two and with opportunities for almost yearly observation. The bounds are often quite sharply defined and it has often been a source of wonder why the trees did not advance. They come close to the border of the prairie and there remain, showing by their size that such had long been the case. Patches of hazel or sumach may occur, as they likewise do in open places of the woods or when trees are scattered, but there is little or no shading off in height from the tallest down to the lowest trees and shrubs, or the formation of stories as is usually the case where a timbered lot abuts on a cleared one in a forested district. It is true that

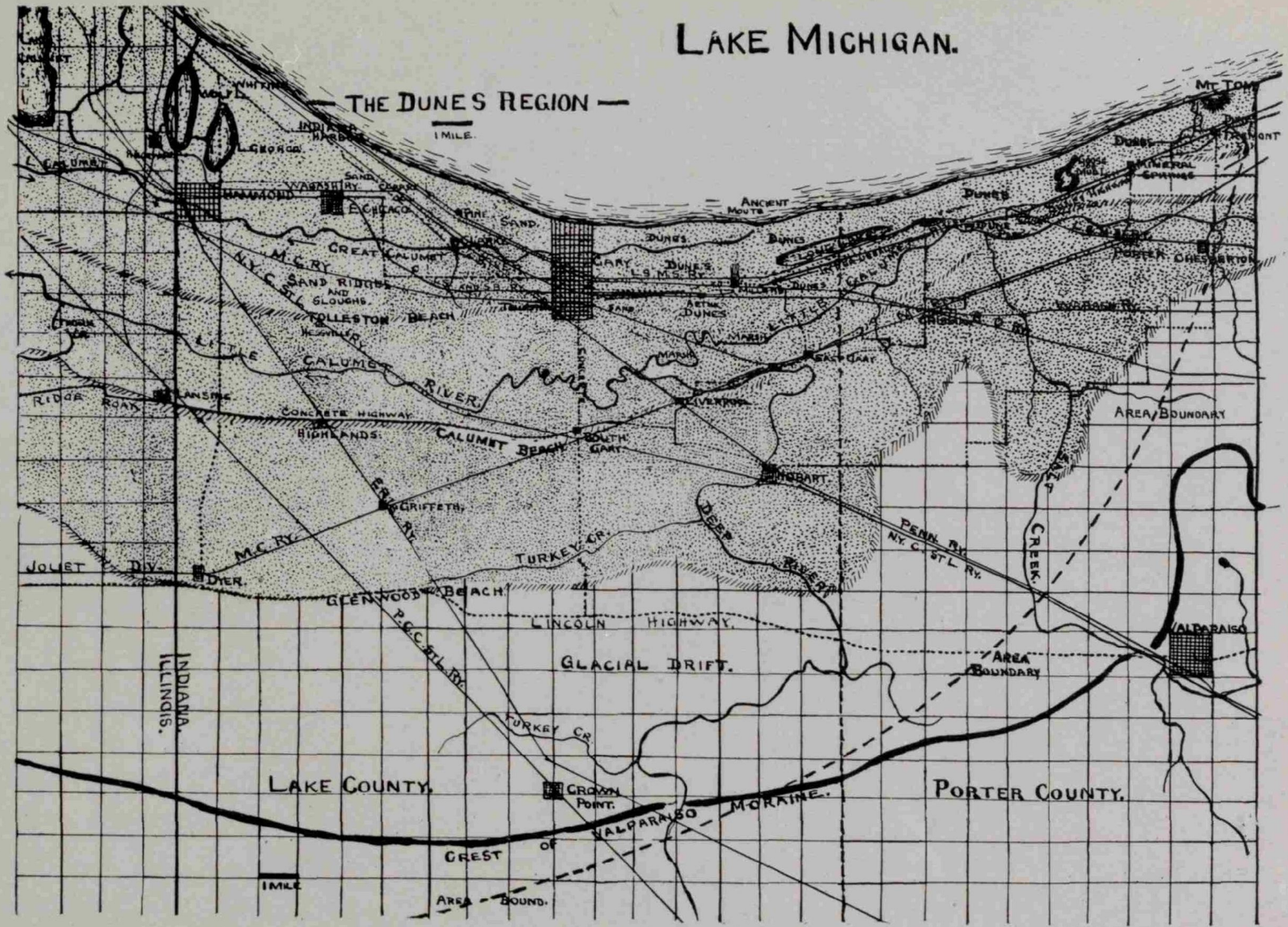
where the land is brought under cultivation opportunities for this are restricted, as the land left in forest and that used for tillage are apt to be kept unchanged year after year, and so remain in the same relations. But where this is not the case, the oaks, the hickories, the sugar maples, and other "hardwoods" do not advance and take possession of the prairie soil.

There is another feature of interest bearing on this relation of the two, the reforesting of areas that have been cleared and the foresting of those that are of prairie origin. When land of the former character ceases to be cultivated, being left for pasturage and perchance, neglected, the arborescent vegetation begins to come back when not too closely cropped by stock. Among the first of woody species to appear and hold their place are the thorns, helped in part by their spinous defense. They are accompanied and soon followed by various shrubs and small trees that like open sunny locations, like the crab apples, wild plums, wild cherries, hazel, sumachs, wild roses, elders, and species of Viburnum. Then scattered oaks and hickories obtain a footing. When a field adjoins a wood lot and both are in the same condition, thickets more readily appear along the border and the process is materially helped. It is different when prairie fields are turned from plow or meadow culture to pasturage or partial abandonment and neglect. Owing to their richer soil, more productiveness and easier cultivation, this is less likely to be done than in the case of cleared land and few examples can be found, but when they occur the contrast is obvious. They may adjoin a timbered tract but such growths as appeared under similar conditions of advantage on the deforested sections do not spring up on these. The adjacent woods have the open park-like margin characteristic of those contiguous to a prairie. The field is overgrown with grass and weeds and such herbaceous plants of prairie origin as may have survived in some unmolested stations and are permitted to return to a congenial habitat. When the ground is low and there are open ditches, willows of various kinds and the cottonwood, whose seeds are carried by winds, find a lodgment by their margins, to be accompanied in time by species of Cornus, button-ball, swamp rose, but with slight tendency to spread away

into the fields. From all that I have observed of this character in the two cases, I can but conclude that if large sections of country of this mixed forest and prairie were abandoned and left free for nature to take its course each would revert to its primitive condition, the parts originally forested growing up with trees again, and the parts once grassy would be grass covered prairie once more, both probably with such genera as Poa, Agrostis, and the like prevailing, since the prairie grasses even if present cannot well compete with them.

FLORAL REGION No. VI

The Sand and Dune Region of the Southeast



THE SAND DUNE REGION

THE SAND AND DUNE REGION OF THE SOUTHEAST

THE sand and dune belt of the Chicago Area as it existed originally before the advance of urban improvements began within the present limits of Evanston to the east of the Calumet Stage lake beach where it cuts the present lake shore. Widening to the south at Foster Avenue it was two and one half miles wide. Farther south it narrows to three fourths of a mile at Irving Park Boulevard with still more narrowing to the river mouth, which formed a narrow break in the sand. Southward again there was an increase in width, most of the surface soil west to Hog Island Marsh and Stony Island being sandy. This area is now so covered with buildings and streets as to have lost its original character, which only shows when excavations are made. Even yet in unimproved lots, a sand flora persists with a tenacity worthy of a better fate.

From South Chicago southward and eastward the sand zone broadens so that most of the region to the limits of the Little Calumet alluvial plain is so occupied. In this portion are several lakes and the former lower course of the Great Calumet, which now by the closure of its original mouth is rather a stagnant lagoon than a water course. It is this portion that is meant when the term "Dune Region" is used and it consists of many ridges of sand and alternating swales or lagoons in its western portion and of a much less orderly arrangement of dunes, flats, ponds, swales, ridges, swamps, marshes, and waterways to the eastward. The arrangement is more properly described as a confused jumbling of all the above named features, culminating in high dunes that have a world wide celebrity. There were few and poorly developed dunes in the northern part of the sand belt, the prevailing winds coming from the wrong direction to pile the lake shore sands. As more and more of the land appeared to the southeast and east of the shore line, higher and yet higher



WOODRUFF

SAND CHERRIES ON THE SHORE SLOPE; MT. TOM IN THE DISTANCE

the sands were swirled and more and more grand became the dune development, until the culmination at the eastward limits of our area in the magnificent Mt. Tom Dune.

As already suggested, the marked surface feature of this sand belt through much of its extent is the alternation of sand ridges of varying elevation and the depressions lying between them, these almost invariably, except where drained, containing water either as intermittent ponds or elongated and continuous sloughs of some width and depth. The ridges remote from the Great Lake were, and at places now are, well covered with arboreal plants as well as with many vines and herbs. As we approach the lake more and more sand appears at the expense of vegetation.

This is, of course, the natural consequence of the relative age of the various elevations. The immediate shore is a wide, gently sloping beach, and it is from this sand reservoir that all the inland heights of whatever magnitude, have been derived. The sloughs are so little above the lake in surface level that they doubtless represent the approximate height of the ground water.

Besides the dunes, ridges, and intervening swales, there is another set of striking topographic phenomena existing in the form of three more or less well-marked and continuous ridge-like elevations that extend from the north of Evanston and Winnetka south and southeast and thence eastwardly roughly parallel to the lake shore to our limits. These ridges are broken by the Chicago River and the outlets of the ancient Lake Chicago, where these debouch into the Des Plaines valley. They are the *ancient beaches* of glacial Lake Chicago, which for long periods of time stood at successively lower levels each higher than the present. These beaches often extend for long distances with unbroken elevation, abrupt eastward and gentle westward or landward slopes, and are largely composed of sand, gravel and clays of evident beach formation. They may or may not be reinforced by present-day wind-blown sand ridges, for these often intersect them at all angles. All were and many now are in part covered with a growth of trees, characteristically bur oaks.

These beaches, from the present lake inland, are named the Tolleston, Calumet, and Glenwood and are all well shown on the

north side in Chicago on Irving Park Boulevard at Clark Street, Milwaukee Avenue, and Dunning, respectively, and on the south side along 63d Street at Englewood on the Hill, and east of Summit where the Calumet and Glenwood are in close proximity. The present ridge road concrete highway runs for a long distance along the Calumet Beach from south of Hammond to well east of East Gary, here occupying the south margin of the Little



POSS

MOVING DUNE BURYING A THRIFTY JACK PINE FOREST
LONG LAKE, INDIANA

Calumet flat or alluvial plain. Farther east this stream breaks through the Beach which continues as a most pronounced feature along the south margin of a great flat just landward of the Dunes, and is seen to fine advantage at Chesterton and Mineral Springs. Everywhere the beaches are full of interest and of striking landscape features.

Small dunes occur as far north as Evanston and some quite pronounced elevations originally existed from Edgewater to Graceland that are now levelled by city grades. The same thing has happened as far east as Gary, nearly all of the sand elevations

having disappeared. From this city east, however, the dunes rapidly gain in elevation, forming one or more series in more or less disordered array, until at Mt. Tom, at our eastern limit, the shore dune is 295 feet in height. South of Miller and facing the Little Calumet River an ancient dune is a hundred or more feet above the flat. At Miller and again at Dune Park going northeast from each are regions of very rough dune lands of old type, interspersed with many depressions containing lakes and marshes. The largest, called Goose Lake, is now generally dry except in spring and is a mile long from north to south and one quarter to one half mile wide. The north end is one eighth of a mile from Lake Michigan. Long Lake begins as a marsh near Miller and extends to within one mile of Dune Park, a distance of five miles with dunes on either hand and shore marshes of some extent.

The flood plain of the Little Calumet is an alluvial or sand and gravel flat bordering the tortuous river, and is from one half to one mile wide. It is mostly wet or even marshy, although some parts are grass or corn lands. There are many bogs due to imperfect drainage and saturated soils. These offer wonderful spots for rare plant collections and are in four places timbered with tamarack. The Grand Calumet in the dune region is far different, being encroached upon by the drift sand, and, as before intimated, it has become in a large measure an open sewer, devoid of plant life. Its ancient mouth northeast of Miller has been for thirty years closed by sand. Here and there are marshes bordering it which still offer favorable localities for plant growth.

From Pullman to East Chicago are a number of lakes before mentioned, Calumet, Wolf, and George, that are rapidly losing their pre-eminence as habitats of aquatic plant and animal life, due to the encroachment of factories and various sewage and drainage operations. There are as yet extensive marshes along the south and east shores of each that support a luxuriant hydrophytic flora.

The conspicuous and outstanding fact about the whole southeastern dune region is the element of change. The great operations of human activities are levelling many hundreds of acres,



WOODRUFF

THE SHORE DUNE AT MINERAL SPRINGS

razing dunes and ridges, and filling or draining ponds, lakes, marshes, and sloughs. At the same time in a number of places the deforested dune summits are shifting landward and slowly but remorselessly changing the landscape, uncovering buried forests of dead trees and filling swales and sloughs. Probably one half of the total original sand area is now occupied by city blocks and streets and it is only beyond Gary that real unmodified sand rules supreme and the end is not yet. At Dune Park great areas have been converted into barren wastes by the steam shovels and surely and not over-slowly the dunes crumble and are transferred to the long trains of waiting cars for transportation to the great city in the northwest. In the excavations brought about at Dune Park great forests have been unearthed that number thousands of specimens, often trees of great dimensions. These "graveyards" of a long dead forest growth are very impressive reminders of what the shifting sands have been able to do.

Another element that has much to do with a fast vanishing flora is the constant recurrence of fires usually brought about by the sparks of the passing locomotives of the numerous railways. Too often, however, carelessness on the part of smokers and campers starts the fire from a match or a neglected campfire. These fires sweep over hundreds of acres, destroying herbs and shrubs and injuring trees by thousands. They often fire the dry peat of marshlands and smoulder for weeks and even months, eventually destroying the whole top soil layer. A more desolate place can hardly be imagined than a burned over woodland and the pity is that there seems to be no remedy.

At four localities, as before noted, soil characteristics, topographic features, and imperfect drainage have developed tamarack swamps of considerable size. Three of these are near Miller and one, the largest, at Mineral Springs. One of these nearest Miller has been badly damaged by sewage and fire; one is almost exterminated by cutting and pasturage, leaving but two of fairly flourishing conditions to harbor their wealth of rare and interesting plant forms.

Before giving special attention to the striking peculiarities of the flora of the dunes, it may be said as a fitting ending to this

general discussion that doubtless the future will note the extermination of a very large part of both the more fastidious plants and of suitable habitats, the two in truth going hand in hand. It is one of the penalties attached to civilization, and however much we may deplore we are at the same time helpless to prevent. The Dune Region, lying so near Chicago and almost at the doors of the great and rapidly growing city of Gary, inter-



COTTONWOODS ON THE SANDS

sected by many railways and interurban roads and lying on either side of the main Chicago and Michigan auto highway, is of the easiest access to untold thousands. These come throughout the year, many for the beauty, novelty, and scenic interest of the region; many for pure recreation, and an ever increasing horde to gather the wild flowers that grow in myriads.

The efforts of local, state, and various national organizations, as well as the untiring efforts of individuals, many of them scientific men of great influence, have finally been rewarded by the formation of the Indiana Dunes Park. Several hundred



A SHIFTING DUNE, CHESTERTON

acres extending along the lake from the vicinity of Waverly Beach eastward, and inland for nearly a mile have been acquired by the State of Indiana and dedicated forever to the people, to be used in every way that is compatible with the aims and purposes of a conservation area. All concerned in this happy solution deserve the thanks of all well-wishers of conservation, and in particular the legislators of the state, who have thus built an enduring monument to their public spirited and long-sighted devotion to the welfare of the commonwealth they serve. Guards have been supplied, woodland trails have been opened, and as far as possible everything left as nature built with such provision for sanctuary. A host of our rare wild flowers ought long to survive.

For the purpose of this report and based on topographic and hydrographic conditions in varying combinations the Dune Region may be conveniently and naturally divided into the following areas or zones of vegetation:—

A. The Recent Shore Slopes of Lake Michigan
B. The Proximal or Near Shore Dunes or the Recent Dunes
C. The Distal or Ancient or Well-established Dunes
D. The Dune Swales and Dune-locked Sloughs
E. The Fort Creek Valley and Bluffs
F. Long Lake, Goose Lake, and Adjacent Marshes
G. The Tamarack Swamps
H. The Inter Dune and Beach Flat
I. The Calumet River and Marsh
J. The Little Calumet River and Marsh
K. The Border Region and the Lake Beaches

All are shown in the map of the Dune Area with their relation to each other and to the Great Lake. The more striking plant features of each are treated under the appropriate headings.

A. The Recent Shore Slope

This area is a narrow zone extending from the lake margin in a more or less gentle slope to the immediate base of the shore dune which is rarely ever more than from ten to twenty rods from the lake. In most places it is utterly devoid of vegetation

and constitutes the source of sand supply for the dunes. It is ever being depleted by the wind and added to by the waves. Here and there are small knolls covered with sand beach willow, sand binder grasses (Calamovilfa or Ammophila), the beach pea, and sand cherry, and, thus protected, these elevations may persist for years or grow into small dunes, that rarely attain the height of a man. An occasional cottonwood of disreputable form, a few plants of bug-seed and sea rocket, and toward the upper limit, thickets of sand bar willow, and colonies of wormseed with a rare sand thistle (C. Pitcheri) make up the flora.

From the shore dune base here and there run out tongues or narrow spits of sand tipped with Calamovilfa and clothed with sand willow, choke cherry, wormwood, and beach peas. Among the cherries one finds an occasional Equisetum and false Solomon's seal. Between these miniature spurs of the great dune, sand blowouts stream upward, feeding the heights.

These sands are frequently "singing sands," due doubtless to the angularity of the grains and the resultant friction when trod upon. As one goes east the shore dune encroaches more and more upon the shore and this zone becomes increasingly narrow. Much of this slope is subject to wave action during periods of storm with further increment of sand.

B. The Shore or Proximal Dunes

Immediately behind the shore slope rise more or less abruptly the first outlying shore dunes, attaining a variable height and breadth. These dunes are usually the most striking elevations of the dune region, attaining a height greater than now to be found away from the lake. This is doubtless due to their youth and continuing growth. The old dunes, clothed more or less completely with forest, have lost much of their original height by wind and rain erosion. Mt. Tom, at our eastern limit, is the loftiest of all the dunes, attaining a height of 295 feet above the lake waters as its northern base. Many of the shore dunes are more or less covered with trees to their summits, as is the case with Mt. Tom. Others are variously broken by wind erosions,



WOODRUFF

DEEP RIVER NEAR LIVERPOOL

LOVE VINE OR DODDER COVERING THE COARSE GROWTH

while still others are practically masses of unprotected and constantly moving sands that are relentlessly advancing on the low-lying interior lands. A marked area of this kind is immediately west of the mouth of Fort Creek, adjacent to Mt. Tom. It is an interesting problem as to which will overcome, the dune or the creek. This shore dune was what closed the mouth of the Grand Calumet River about 1890, although it is but fair to state that opening a deep outlet for the river northward to South Chicago had probably much to do in aiding in this closure by very largely diminishing the flow, in fact reversing it.

The tree covered dunes are practically stationary and permanent and offer splendid opportunity to study the effect of exposure on plant distribution. Often very steep, the south slopes are highly heated by the meridian sun of the summer, while the deeply shaded north exposures enjoy coolness and moisture. The difference in plants is often very striking. The prominent species in the forest growth are black oak, linden, cottonwood, choke-cherry, and a few jack pines, with a very exceptional white pine to testify to the story of the oldest inhabitants that originally the dune land was a forest of this species. The shrubs and herbs are the same as for the older dunes.

The most interesting plant phenomena, however, are related to the wind eroded areas or "blowouts." One very striking feature is the ability of the cottonwood and basswood to produce root growth from buried trunks and to persist for a time at least on the growing dune by new and continual root development. There are numerous examples of these trees thus buried to within a few feet of their tops. Black oaks succumb quickly, though persisting for some years on the abrupt landward fronts of the advancing sands. Another very prominent feature is the numerous isolated mounds, hummocks or miniature remnant dunes covered with verdure, the same being the source of their present status. Growths of wild grape, bittersweet, aromatic sumac, choke cherry, Calamovilfa, and smaller species hold the elevations stationary for long periods, until possible undermining destroys them. The abundant fruitage of grape and bittersweet is remarked by every observant visitor.



SAND BURYING A DUNE FOREST



AFTER MANY YEARS, AN ANCIENT FOREST UNCOVERED BY WIND

Another very pronounced feature is the "forest graveyard" of stark and skeletal trunks of the ancient forest buried and uncovered by the shifting sands. Many of the trunks are two to three feet in diameter, clearly indicating a very stable condition of the shore forest and the forest floor for centuries at least, permitting a climax growth of the forest. The trees undoubtedly grew on a flat but little elevated above the present lake level, probably quite similar to the present Waukegan moorland. What caused this apparently permanent, forest-clad flat to take upon itself the character of a dune with its constant shifting of surface is an interesting and difficult problem for solution. The dead trees are white pines and white cedars with various hardwoods intermixed. A most remarkable exhibition of this great buried forest was uncovered at the shore north of Dune Park, by the great steam shovels of the sand companies. Hundreds of great trees were here exhumed in perfect condition lying in all directions, giving one the impression of a forest growth laid flat by a tornado. The opinion is here hazarded that the whole dune region, originally a shoal of Lake Chicago, became a moist forested flat of unknown time duration, but certainly of some hundreds of years. The moisture of the soil prevented fire and there was no bare sand except a narrow beach for wind action. As the lake subsided, the drying land permitted fire denudation and largely increased surface for wind action, so that gradually the dunes appeared.

C. The Distal or Established Dunes

Piled in utter confusion with peaks, depressions, ridges, and flats, apparently without order and yet presenting an obscure east and west continuity, the old well-established dunes form the major area of the region and are to all intents permanent. Every conceivable topographic exposure, except the cliff, is present, with a closely corresponding diversity of plant growth. "The unexpected always happens" and so it is with the plant explorer in this "greatest of earths" dune formation. The turn of a projecting hill, the sudden descent from a long upward climb, a pocket among the sands, a pond remnant hidden and



WOODRUFF

A DUNE FOREST-SURROUNDED MARSH

unknown to most, a narrow gorge formed by the congealing, as it were, of two approaching sand waves of former days, a blistering south slope giving place to the coolness of a north declivity by the mere difference of the dune crown, a sheltered low-lying nook,—each has its own peculiar flora, and to find them each and all, is a task of long lasting and arduous labor.

The tree growth is largely the same throughout, but the local distribution is governed almost absolutely by the relief and the water content of the soil. On the high dry sun-heated elevations, the black oak predominates, almost to the exclusion of other species. White oaks are frequent on other slopes. On shaded north exposures many species occur, red oak, basswood, black and choke cherries, sassafras, June berry, and witch-hazel. Toward the base where moisture is more in evidence, the aspen and great toothed poplar, Hill's and bur oaks, white ash, plum, and ironwood occur. The flats near marshy areas are always occupied with black gum, an occasional cornel, and now and then an ash; also numerous aspens, black haws, red maples, and a few elms. In specially favored places, few and far between, there will be a sycamore, a tulip tree, black willow, peach willow, pignut hickory, and dogwood. All over the lower levels jack pine grows in abundance, here making its most southern station. The stumps of many very large white pines, cut long ago, are scattered over the region.

The shrub growths may be very summarily dealt with. Possibly the most interesting and certainly the least frequent is the Hudsonia (Hudsonia tomentosa), found very rarely in blow-outs or at least in none too well established sands. The bearberry is everywhere on the higher and older elevations but seldom produces heavy fruit crops of its scarlet berries. East of Dune Park, near the New York Central Railway is a large colony of Chickasaw plum (Prunus angustifolia) that is increasing in extent from year to year. It is hard to account for it unless through an accidental sowing from some passing car window. Many far western and southwestern as well as occasional eastern species are thus found from time to time, but, with few exceptions, rarely persist. A small colony of the dwarf hackberry (Celtis occidentalis pumila)

occurs near the Grand Calumet at Miller. The shrubs average about six feet in height and are certainly a curious example of dwarfing, if, as many hold, the form is a variety of the common hackberry, which, by the way, is not found in the Dunes.

The eastern fox grape (Vitis labrusca) is found occasionally in the dunes but is far more common in low-lying grounds east of Dune Park and south of Miller. There it is abundant enough



PEPOON

GOOSE LAKE AS IT WAS IN 1900 NORTHEAST OF DUNE PARK

A FAMOUS COLLECTING REGION IN OLDEN TIMES

to furnish fruit for those who know the secret of its place of growth. The Viburnums (V. pubescens and V. acerifolium) are very abundant. In certain favored regions the oval leaved Jersey tea (Ceanothus ovatus) is found in isolated patches. The Kalm's St. John's-wort (Hypericum Kalmianum) is a very interesting low shrub, particularly in bloom. The blueberries (Vaccinium vacillans and V. pennsylvanicum) and the huckleberry (Gaylussacia baccata) are everywhere on permanent soil and largely assist in maintaining this condition. The sweet fern (Myrica

asplenifolia) is found abundantly near Miller and appears to reach its southern limit here.

It is when we come to herbaceous forms that striking examples are found by scores and nowhere is it possible to find better illustrations of the effect of topography and exposure. Taking the region just east of Dune Park for illustrative purposes we may note the following: beginning at the marsh and proceeding



PEPOON

THE TAMARACKS

THE BOG IN THE CENTER IS A "QUAKING BOG," TREACHEROUS IN THE EXTREME

northward up and over the old dune; fringed and soapwort gentians, arrow and yellow violets, pinweeds (Lechea), calamint, species of yellow foxglove, bird foot violet, great rue, prickly pear, rock roses, rough puccoon, blazing star (Liatris scariosa), false dandelions (Krigia), betony, red phlox, butterfly weed, green milkweed, evening primroses, lupine, thimble weed (Anemone), sand wort (Arenaria stricta), sand cress, and approaching the dune summit, crest grass (Koeleria), Calamovilfa, various sedges (Carices), and upon the crest, a few sand phlox (Phlox

bifida). Farther east, at Mineral Springs, this species is exceedingly abundant, making solid color masses. Everywhere on this long south slope are many large bare spaces, the whole upper slope having an arid aspect.

Immediately the crest of the dune is attained and the steep north slope begun, the flora changes, both in kind and quantity. The ground is effectually covered with vegetation with a practically entire change in species. In descending order toward more shade, water, and humus, we find false Solomon's seal (Smilacina stellata), smooth cress (Arabis laevigata), columbine (Aquilegia), blue bells (Campanula rotundifolia), yellow lady's slipper (Cypripedium parviflorum pubescens), wild geranium (G. maculatum), Solomon's seal (Polygonatum), blue violet (V. sororia), various asters, feverwort (Triosteum), Galium species, wintergreen (Gaultheria), spikenard (Aralia), Smilax species, hepaticas, meadow rue (Thalictrum dioicum), crowfoot (Ranunculus septentrionalis), wood chickweed (Moehringia), and numerous others not possible to mention because of limitation of space. The change is remarkable and very pleasing for those seeking variety. It is almost always many degrees cooler on these shady slopes, there being but little heat reflection, and the soil is invariably cool and ordinarily moist, whereas on the south slopes the sand on a hot day is fairly blistering and the lower air ashimmer with heat.

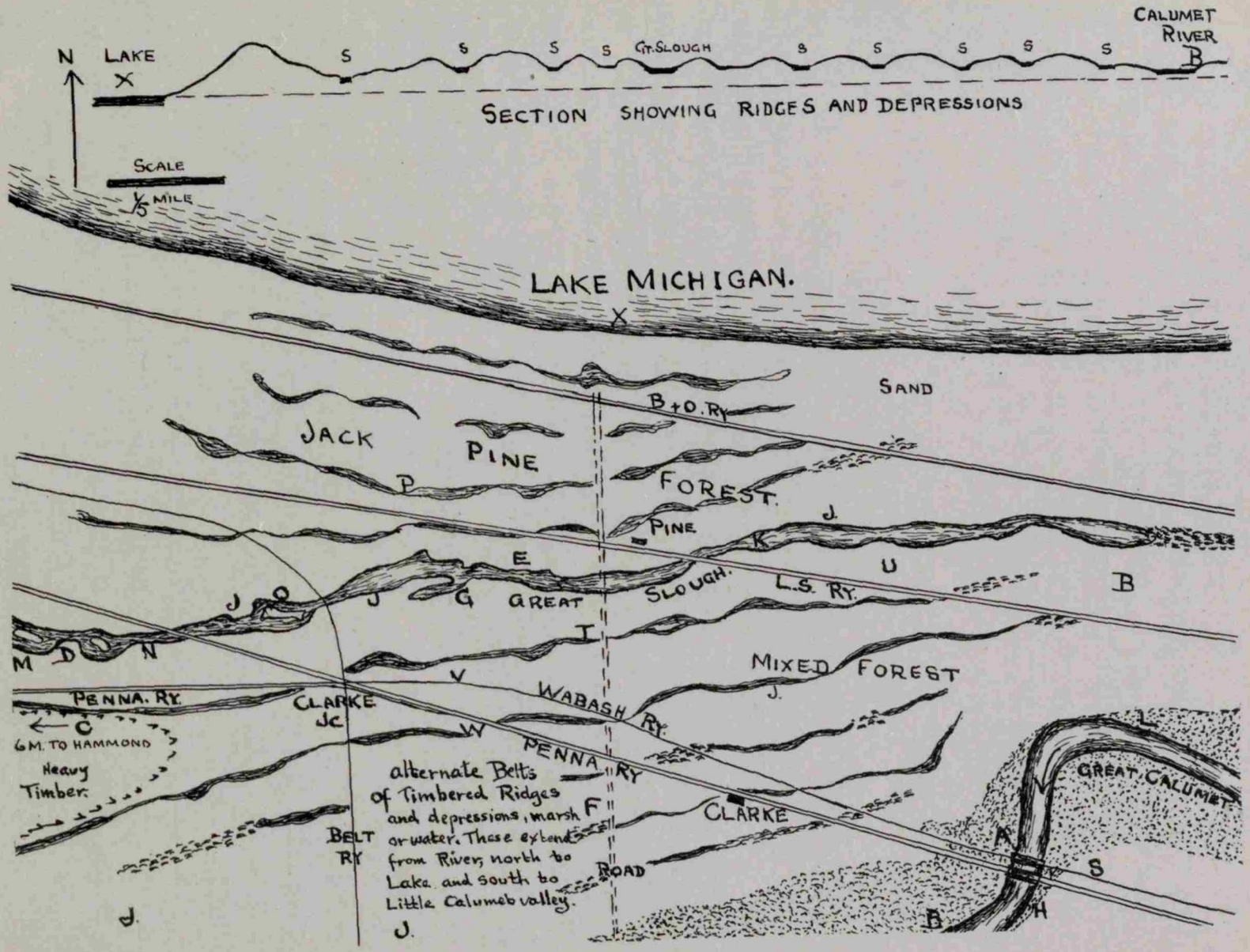
Scattered here and there in isolated localities very hard to find or even to refind unless actually located and recorded, are many rare and very interesting species that give to the dunes as a whole their reputation as a region of remarkable richness in plant species, and further as a seeming gathering point for plants from all points of the compass. Some of these rare dune plants may be here named, the reader consulting the catalog for precise localities. Without any particular sequence may be mentioned the dry hill Selaginella (S. rupestris), ebony fern (Asplenium platyneuron), various yellow flaxes, numerous rare species of Carex, Panicum species galore, rattlesnake plantain (Epipactis pubescens), Polygonella, Talinum, bunchberry (Actaea alba), blue cohosh (Caulophyllum), Sanicula, Pyrola, trailing arbutus

(Epigaea), gentians (G. quinquefolia and G. flavida), Asclepias species, wild comfrey (Cynoglossum virginianum), Monarda, false Pennyroyal (Hedeoma), broom rapes (Orobanche), hawkweeds (Hieracium), Erigeron, Solidago, Antennaria, and other composites. Unless the explorer traverses practically every foot of the ground many of these will escape him, as the localities are often very circumscribed.

D. The Dune Swales and Dune Locked Sloughs and Ponds with Adjacent Shores

Until comparatively recent times, a large number of the lower depressions contained elongated bodies of water, varying from a few feet to many rods in width and having wider or narrower borders of low-lying thickets or grassy marshlands. A somewhat imperfect map is appended of the Great Slough as it existed in 1892 to 1906, before the advent of Gary, Buffington, Indiana Harbor, and Whiting activities, and the clearing of land for railroad purposes. It was this slough and vicinity that yielded so many fine examples of rare and beautiful plants in the days of Hill, Umbach, Monroe, Higgins, Moffatt, and others, who knew, as it were, every inch of the region. Many islets, peninsulas, coves, and flats with long stretches of deep water, steep and sloping banks, water-logged trunks of huge pines, shoal water marshes of cat-tail, bur-reed, sedge, and similar plants afforded abundant shelter for delicate forms. The water was always clear, and, before the days of sewage, palatable as the writer many times proved.

It was adjacent to this slough and other depressions and ribbon-like waters that orchids abounded, such as the small yellow lady's slipper (Cypripedium parviflorum), the large yellow lady's slipper (C. parviflorum pubescens), which at B on the map was found in 1894 in a colony of some hundred plants in bloom (see Catalog), the small white lady's slipper (C. candidum) at N, the showy lady's slipper (C. hirsutum) at J, bracted orchis (Habenaria bracteata) at E, Habenaria clavellata at G, Habenaria Hookeri at M, Pogonia ophioglossoides at G, Calopogon at G, Spiranthes



THE GREAT SLOUGH

gracilis at J, twayblade (Liparis Loeselli) at N, a colony of pitcher-plant flourished at D, eleven species of willow were scattered in suitable habitats along its length. On the muddy shores and in the water four Utricularia species bloomed, the gem being the purple one (U. resupinata) at G. Three duckmeats (Lemna) and Wolffia columbiana were very common, the latter particularly so in small ponds at T. White cedar (Thuja) grew on every islet and water-soaked peninsula, twinflower (Linnaea) occurred at E, one of the few stations for this plant in the Chicago Area. Rushes and Carices of many species, some rare, were abundant, water arum (Peltandra) reached its western limit in these parts except at Wolf Lake. A specimen of reed (Phragmites) was found with an astounding horizontal growth extending along the slough. (See Catalog.) Hornwort, Elodea and three water milfoils (Myriophyllum) filled reaches of the water, yellow pond lily (Nymphaea), two white water lilies (Castalia) and water shield (Brasenia) were exceedingly common. Nelumbo lutea, the lotus, grew in the Grand Calumet at A. There were many plants, probably Indian planted, at this the only station. Sundew (Drosera rotundifolia) was found on nearly all water-filled, half submerged logs as at A. Many other plants might be named but enough has been said to show the remarkable richness of the flora of this great slough. From its extent and depth as well as its near approach to the Grand Calumet, near where Gary now stands, it is possible this slough may represent a part of that river in the days of former higher stream elevation, before erosion reduced the stream bed to lake level.

Other sloughs and marshes add their quota to the flora, nearly every one possessing one or more species not common or lacking elsewhere. Without any attempt at definite location (consult Catalog) there may be named as occurring, in but a few localities and often in but one or two, the following: forget-me-not (Myosotis), cross milkwort (Polygala cruciata), deer grass (Rhexia virginica), orange fringed orchis (Habenaria ciliaris), purple fringed orchis (H. psychodes), long leaved sundew (Drosera longifolia), buckbean (Menyanthes), wool grass (Eriophorum species), a host of Potamogeton species, many rare, and Arethusa



WOODRUFF

THE GRAND CALUMET

NEAR THE ANCIENT OUTLET INTO LAKE MICHIGAN

bulbosa in but one locality. As has before been stated, very much of this rare flora has disappeared forever, owing to drainage, railroad building, sand hauling and filling, extension of urban communities, and the tremendous influx of factories. Much of the pond water remaining is practically sewage. The choice plants of these sloughs and marshes, as far east as Dune Park, have disappeared or are vanishing rapidly.

E. Valley and Bluffs of Fort or Coffee Creek[1]

This creek occupies the extreme eastern portion of our area, discharging its waters into Lake Michigan just west of Mt. Tom. Its western headwaters drain the extensive marshes north of Chesterton and Mineral Springs, largely through artificial ditches. The stream proper heads to the east and south. The lower half mile of its course is in a narrow alluvial valley some eight or twelve rods wide. The upper course is in the interdune and beach flat. Very pronounced bluffs begin at the highway bridge near Lake Michigan and extend for some distance inland, mostly on the left bank of the stream. The mouth has a bar continually shifting so that the actual entrance to Lake Michigan varies twenty or more rods east and west. Below the bridge a live moving dune constantly threatens to fill the stream and is as constantly repelled. Mt. Tom rises almost from the right margin of the little valley and towers to an altitude of 295 feet above Lake Michigan. (See map.)

The plant localities of special interest are the west bluff above the bridge and the alluvial valley. The bluff is fairly precipitous and has northeast, east and southeast exposures, contains some admixture of clay, and varies from twenty to sixty feet in height. The strikingly interesting species are ebony fern (Asplenium platyneuron), Christmas fern (Polystichum), forms of Aspidium spinulosum, fragile fern (Cystopteris fragilis), ostrich fern (Onoclea struthiopteris), several species of Equisetum, Smilax rotundifolia quadrangularis), rattlesnake plantain (Epipactis pubescens), beech (one of the three stations), columbine, tulip tree (Liriodendron), bloodroot, Arabis laevigata and A. canadensis, alum

[1] See Dr. Hill's paper for other names.



A WOODED DELL AMIDST THE DUNES NEAR MILLER, INDIANA



A NORTH EXPOSURE AT A DUNE BASE

WHITE CEDAR AND TWIN FLOWERS

root (Heuchera hispida), nine-bark (Opulaster), Fragaria americana, pale vetch (Lathyrus ochroleucus), trailing arbutus (Epigaea), and pipsissewa (Chimaphila umbellata).

The valley possesses a few very exceptional species. Large colonies of the great mallow (Hibiscus Moscheutos), a very striking plant, are found near the mouth of Fort Creek at Waverly Beach, north of Port Chester. Another colony, first noted by Professor Hill in 1891 in Wolf Lake near Hegewisch, is still in a flourishing condition. At that time, also, there were many plants in Lake George. Dr. Moffatt reports it on the Des Plaines River, near Summit, as rare. This may have been H. militaris which occurs very rarely along the Des Plaines. The plants at the first station bloom and fruit abundantly, but, growing directly on a well-traveled auto highway are in grave danger. Trilliums, Solomon's seal, skunk cabbage, green dragon, wild ginger, geranium, phlox, and broom rape flourish in the alluvial forest. As the stream meanders through the flat back of the shore dunes the west branch flows near a colony of downy poplar (Populus heterophylla). This locality is far to the north of the proper distribution of this species, and affords a difficult problem for the phytogeographer. The specimens are rapidly "running down at the heel" and bid fair to soon disappear. In 1910 the larger trees were ten inches in diameter and forty feet in height. Three other species of Populus occurred on the same low ridge within ten rods, aspen (P. tremuloides), great toothed poplar (P. grandidentata), and cottonwood (P. deltoides). Papaw (Asimina) here gives us a few small trees. But two other stations occur for this species, one near Willow Springs, the other near Orland. Lizard's tail (Saururus) occurs here only. Fox grape, alder, and beech fern are other interesting finds.

F. Long Lake, Goose Lake, and Adjacent Marshes

These two bodies of water, originally very much larger in extent than at present, with adjacent marsh and swamp lands afforded ideal habitats for a host of hydrophytic plants. When the writer first saw Goose Lake in 1895 it was a body of water

showing "white caps" wave action and a clear water reach of a mile or more by a half mile. In 1915 Professor Umbach and myself walked its bottom dry shod. Whether or not the waters are permanently decreased or destroyed remains to be seen. Long Lake has not suffered as much, but is far less in extent than formerly. Water used to come up to the main street of Miller in those days.

A host of Potamogeton species that our good friend Professor Hill loved so well, pipewort (Eriocaulon), yellow-eyed grass (Xyris), sedges by scores, many grasses, and a profusion of higher species on the peninsulas, islets, swampy or steep shores, wooded "hinterland," and bare, grassy, sun-illumined knolls, ridges and declivities made the region a place never to be forgotten as an ideal botanizing locality. My first view of probably 50 species was in this region. Well do I remember the pilgrimage with Professor Hill, Professor Umbach and Dr. Moffatt to gloat on the *one* specimen of ebony fern that grew on a shaded bluff, near the east shore of Goose Lake, and also the dessert of Xyris, Eriocaulon, margined fern, a half dozen species of Rynchospora, Dulichium, and four species of Polytrichum which Professor Hill, with justifiable pride, exhibited. The days are gone, the men are largely passed on, the flowers have disappeared, and into our hearts a feeling of sadness comes to realize that never again can these things be.

H. The Tamarack Swamps

These are haunts of ferns and orchids, rattlesnakes and "rarae aves." Each year an increasing pilgrimage takes place to see and study, and too often, alas, to gather under the conscience-quieting guise of collecting for some school or college, and so both snake and flower are disappearing, crushed or plucked, no matter how we, who love the wild things, may warn or plead. Someone "who knew not Joseph" comes along and the vandal deed is done. To illustrate: in 1916, escorting a party of fifty men and women, we came to the margin of the stemless lady's slipper's sanctum sanctorum. We paused, drinking our fill and passed on, not one person violating the unwritten law of the

orchid lover. An hour later, as we ate our lunch on the margin of the swamp, a party of robust young men and women from ———— college came along, and *each gloried* in the *rare* specimen he had plucked. "Cypripedium acaule, your regal beauty is your doom!"

As stated previously, the four tamarack swamps in our area are regions of very fertile soil, poor drainage, and soil saturation



BULRUSH (*Scirpus validus*) AND THREE-ANGLED RUSH (*Scirpus americanus*) IN SHOAL WATER

and in each case the swamp abuts on a dune at its northern margin. Three of them are on the north side of the Little Calumet Valley and the fourth, Cowles, the most noted one, at Mineral Springs on the flat extending eastward from the same. All are of small area, from two to twenty acres in extent, all have practically the same characteristics and flora. The swamp south of Miller is largely destroyed by fire, drainage, and sewage. A second, south of the Baltimore and Ohio Railway, southeast of Miller, is nearly destroyed by cutting and pasturage. The

remaining ones have more or less of a future, according to what man may elect. These swamps, with the adjacent marshes, are the remaining strongholds of the massasauga or prairie rattlesnake, one or more being killed every year. The largest tamaracks are 16 inches in diameter and 60 feet in height, and in suitable environment are very vigorous and reproduce normally by seedlings. The network of roots large and small form a layer about



PEPOON

BLACK GUM, RED MAPLE, AND BLACK ASH

two feet in thickness, apparently not penetrating below the water level. Upon this living floor humus, tree trunks, and wind blown sand have formed an exceedingly fertile soil, in which a wealth of rare plants grow, having warmth, moisture, food, and protection, in ideal proportions for optimum plant development. Abutting the Mineral Springs swamp is a quaking bog and small outlier thicket that are rarely visited because of the treacherous soil.

Without any attempt to give the exact station for each species, an enumeration of the most important will demonstrate the richness of the flora in rare forms. Among arboreal types the

tamarack occurs in almost pure growths. Many are annually uprooted by wind and the obstructions thus formed make progress through the swamp a slow affair. The poison sumac (Rhus venenata) reaches its maximum and is very common and terrifying to those who fear it. This recalls discovering Mr. Higgins, of Old Fashioned Garden fame, carrying a fine spray of the foliage and flower of this plant, dangling at the end of a ten-foot pole. The best part of it is that he was headed for Chicago via the railway train. As a matter of fact this species is certainly not more virulent than the common poison ivy. About the decaying logs are found bunchberry (Cornus canadensis), Mitella nuda, star wintergreen (Trientalis), two white violets (V. blanda and V. conspersa), showy, stemless, and large yellow Cypripedium, cherry birch, alder, red maple, black ash, white pine, red elder (Sambucus racemosa), pitcher plant, gray grape (Vitis cinerea), Clintonia, lax forget-me-not (Myosotis laxa), Mitchella, margined and crested Aspidium, besides the common A. spinulosum, and many others attest to the richness and variety of plant life. To obtain a complete picture the catalog must be consulted.

H. The Inter-Dune-Beach Flat

I. The Grand Calumet River and Marsh

J. The Little Calumet River and Marsh

Very little need be said about these topographic regions of the area. All are largely given over to marshes, shoal pools, ditches, and the meandering rivers. All are almost flat expanses, although possessing inconspicuous elevations, usually in the nature of low elongated ridges. All have a large preponderance of peaty soils with some sand and gravel on the elevations mentioned above. In all, the drainage is poor. Many parts are subject to overflow during times of continued rains. Near the dune elevations erosion has brought much sandy débris with corresponding soil and water modifications. All three have suffered much, from the plant standpoint, from drainage measures and various railroad and manufacturing interests.



PEPOON

A CHARACTERISTIC INDIANA SLOUGH

Briefly each may be described as follows: (H) This flat extends somewhat north of east from the valley of the Little Calumet at Dune Park to beyond our limits, averaging one half mile or more in width, and is well shown at Mineral Springs and Port Chester on the Interurban Ry. The south limit is approximately the Calumet Beach, finely developed at Port Chester, and drained by ditches and streams flowing into the Little Calumet at Dune Park and Coffee Creek, and its branches and ditches eastward. (I) The Grand Calumet and the valley extends from Miller to the state line and is at the present time almost entirely usurped by urban and railway activities. From Cudahy to Clarke is perhaps the best remaining partly natural portion. The valley is much narrower than either the Flat or the Little Calumet, and through it runs the river as an open sewer. (J) The valley of the Little Calumet, from near Dune Park to the western limits of the area under consideration, is a mile or more in average width, particularly after Deep River joins the Calumet. A typical section is seen on the auto highway between Miller and East Gary. The Calumet Beach continues as the south marginal elevation.

Very little need be said about the plants. A large representation of grasses, sedges, rushes, and allied marsh plants make up the bulk. Potamogeton species are very numerous. Selaginella is common. Marsh grass, violets, saxifrage, marsh marigold, grass of Parnassus, golden ragworts, and fleabane are abundant. The finest exhibit of bluets occurs near Tolleston. Great areas are rich with yellow paint brush, which proves, however, to be a form of C. coccinea. The cuckoo flower is abundant near Clarke, and forget-me-nots also. On drier portions phlox, shooting star, various violets, crowfoots, and anemones are common. A club-moss (Lycopodium) and a Sundew (Drosera rotundifolia) occur along the Interurban at Port Chester. Pond lilies, water crowfoots, milfoils, Elodea, mermaid weed, and Ludwigia are in the shoal or deep water. The railroad ditches are becoming havens of refuge for many of the above plants and show an increasingly growing flora. For example, in a moist cut near Hammond thousands of Drosera rotundifolia have established themselves.

K. The Lake Beach Summits and the Border Uplands

These topographic regions have had long permanency and have developed a flora characteristic of the drift regions adjacent. The most characteristic tree is the bur oak and the most characteristic shrubs are the dwarf willow and rose and Jersey tea. The common herbaceous forms are the members of the composite family from the Antennaria of spring to the asters, Solidago species and



AN EMBRYO DUNE
FORMED BY *Calamovilfa longifolia*

Helianthus of late summer and fall. Possibly the most striking flower exhibit is that of Phlox bifida on the Calumet Beach at Port Chester, where a solid sheet of color attracts the eye at the period of bloom. In general the beaches, having for a long period of time a permanent surface, show a very universal mixture of species, comparable to the similar topographic regions of the glaciated uplands, more or less distant from the lake. Any discussion of floral peculiarities would be superfluous, having been sufficiently discussed in other portions of this work.

CATALOG OF THE FERN AND SEED PLANT GROUPS OF THE CHICAGO AREA

THE NOMENCLATURE FOR SCIENTIFIC NAMES USED IN THIS CATALOG

is based upon **Gray's Manual of Botany,** Seventh Edition, 1908. The equivalent synonyms are those in **Britton and Brown's Illustrated Flora of the Northern States and Canada,** Second Edition, 1913. Special groups are based upon monographs of later date, statements of which will be found in their proper places in the catalog. Those using this book must remember that many of the names may be subject to change in later editions of plant manuals. It is rumored that an Eighth Edition of Gray is contemplated and that important changes of names will appear. With our present sources, however, the terms used are sufficient to locate properly each plant.

PART TWO

CATALOG OF ALL PLANTS—NATIVE, NATURALIZED AND INTRODUCED

OF THE

FERN AND SEED PLANT GROUPS

FOUND GROWING SPONTANEOUSLY
IN THE

CHICAGO AREA

BY

H. S. PEPOON, M. D.

WITH THE

ASSISTANCE OF MANY LOCAL BOTANISTS

AMONG WHOM ARE

PROF. E. J. HILL,* PROF. LEVI M. UMBACH,* DR. HENRY C. COWLES, DR. WILL S. MOFFATT, MR. WILLARD CLUTE, DR. FRANK GATES, MR. GEORGE BRENNAN, MR. JESSE SMITH, MR. O. M. SCHANTZ, MR. FRANK WOODRUFF, DR. CHAS. MILLSPAUGH,* MR. WOROLLO WHITNEY, MR. JENS JENSEN, MR. W. K. HIGLEY,* MR. CHAS. RADDIN,* MR. FRANK JOHNSON, PROF. BABCOCK,* MR. DARLINGTON, MR. V. O. GRAHAM

Verified by Study
of the Actual Specimens, Found in the Field
or in Various Herbaria

CORRECTED TO MAY 1, 1927

*Deceased.



PEPOON

THE DESTROYING ANGEL, MUSHROOM (*Amanita verna*)

NOT PROPERLY BELONGING IN THIS WORK BUT INSERTED HERE FOR SAFETY-FIRST SAKE

KEY TO THE FERNS, HORSETAILS, AND CLUB MOSSES

	Plants fern-like, with usually much divided leaves	A	
	Plants with hollow, grooved stems, with scale-like leaves and terminal cone-like fruits	1	
	Plants with numerous, small, moss-like leaves, covering erect or creeping stems and cone-like fruit	8	
A	Fruits (sporangia) on separate stalks or separate leaf portions	B	
A	Fruits borne on the underside of the ordinary leaves	H	
B	Sporangia on separate stalks	C	
B	Sporangia on separate leaf divisions	E	
C	Leaf of sporangia densely hairy, light cinnamon color	Cinnamon Fern	29, 30, 31
C	Leaf of sporangia smooth, green becoming brown	D	
D	Sterile leaves very large, oblong, many times divided	Ostrich Fern	26
D	Sterile leaves broadly triangular, deeply cleft	Sensitive Fern	25
E	Sporangia bearing portion long stalked	F	
E	Sporangia bearing portion modified leaf divisions	G	
F	Ternately divided leaf, sessile, from middle of stem	Virginia Grape Fern	35
F	Ternately divided leaf, long stalked, from base of stem	Grape Fern	33
F	Ternately divided leaf, finely dissected, long stalked, from stem base	Dissected Grape Fern	34
G	Sporangia portions in middle of foliage leaf	Clayton's Fern	28
G	Sporangia portions at summit of foliage leaf	Royal Fern	27
H	Leaf undivided, much attenuated at rooting tip	Walking Fern	12
H	Leaf more or less divided	I	
I	Leaves pinnately once divided or in the Cliff Brake, partly twice	J	
I	Leaves more than once divided	L	
J	Leaf stalk and rachis shining purple-black	a	
	a Leaves ordinary	Ebony Fern	8
	a Leaves leathery, on rocks	Cliff Brake	5
J	Leaf stalk and rachis green	K	
K	Leaf blade thin, broad, lanceolate	Narrow Spleen Fern	9
K	Leaf blade thick, firm, lasting over winter	Christmas Fern	13
L	Leaves dichotomously or ternately divided	M	
L	Leaves pinnately, 2–4 divided	N	
M	Leaves dichotomously divided; leaf stalk and its divisions shining dark brown	Maiden Hair	3
M	Leaves ternately bipinnate; leaf stalk green	Brake Fern	4
N	Leaves slender, long or short, delicate	O	
N	Leaves large, ample, 1½ to 3 divided	P	
O	Long and narrow, bulblet-bearing, on rocks	Bulb Fern	22
O	Small and slender, without bulbs, 1″ or less	Fragile Fern	23

P	Strictly marsh plants	Q	
P	Plants of ordinary wooded situations	R	
Q	Large, rigid, twice pinnate	Chain Fern	7
Q	Smaller, thin, once and a half pinnate	Marsh Fern	14
R	Leaves triangular, once and a half pinnate	S	
R	Leaves lanceolate to ovate	T	
S	Longer than broad, dark green	Beech Fern	1
S	Broader than long, light green	Beech Fern	2
T	Leaves 2–3 pinnate	U	
T	Leaves 1½ pinnate	W	
U	Leaves twice pinnate	V	
U	Leaves thrice pinnate	Dilate Shield Fern	20
V	Yellow green	Lady Fern	11
V	Dark green	Florist Fern	21
W	Leaves thick and firm, blue green	Margined Fern	17
W	Leaves ordinary	X	
X	Leaves very broad, ovate, dark green	Goldie's Fern	18
X	Leaves lanceolate	Y	
Y	Leaves much elongated, stipe straw color	Silvery Spleen Fern	10
Y	Leaves otherwise	Z	
Z	Leaves very narrow, firm	Crested Fern	19
Z	Leaves thin, light green, long pointed	Northern Shield Fern	16
1	Plants firm, all green, but little branched, cone bearing	2	
1	Plants of two forms, green, much branched and brownish, unbranched, cone bearing	3	
2	Tall and coarse with many rough grooves on stem	Great Scouring Rush	42
2	Slender	4	
3	Branches of sterile stem themselves branched, 3 angled	Wood Horsetail	
3	Branches of sterile stem simple	7	
4	Stems not rigid, branched, often cone bearing, in water	Water Scouring Rush	39
4	Stems rigid, much branched from near base	5	
4	Stems tall, evergreen, 8–35 furrowed	6	
5	Stems very slender, evergreen, 6 grooved	Scirpus-like Scouring Rush	44
5	Stems slender, simple, from branched base, 5–10 grooves	Variegated Scouring Rush	43
6	Stem rough, sometimes branched, tuberculate	Scouring Rush	41
6	Stem smooth, unbranched, not tuberculate	Smooth Rush	40
7	Branches 3 toothed	Horsetail	38
7	Branches 4 toothed	Common Horsetail	37
8	Very delicate, moss-like, with small leaves in 4 ranks	Marsh Selaginella	52
8	More robust, with stiff leaves in many ranks	9	
9	Stems extensively creeping, yellow green	Running Ground Pine	47, 50
9	Stems short to nearly erect	10	
10	Short, creeping, withered fruiting branches, yellow green	Yellow Club Moss	46
10	Stems lax or erect, dark green	11	
11	Much branched, erect, like miniature pines	Ground Pine	48
11	Stems 2–3 times forked, low, shining	Shining Ground Pine	45

SUB-KINGDOM PTERIDOPHYTA

Ferns and Their Allies

ORDER 1—FILICALES

FERN PLANTS.

The plants of this order are represented within our limits by 3 families, 11 genera, and 36 species and varieties.

In the world there are 11 families, 120 genera, and 4,500 species. In the United States there are 35 genera and 165 species.

Many are ornamental; a very few are of other economic value.

POLYPODIACEAE.

THE TRUE FERNS.

The limitations enforced by the almost entire absence of rocky topography causes the fern flora to have the very small number of 26 species as representative of this great family of 4,599 ferns. Of these, by far the greater number appear in the southeastern portion of our area, where the topographic features are the most varied, including our only rock outcrops.

1. PHEGOPTERIS POLYPODIOIDES Fée. Dryopteris Phegopteris (L.) C. Chr.

LONG BEECH FERN.

Damp and rich woods, occasional southeast, not rare near Mt. Tom, along streams. Abundant north of Port Chester, along the west branch of Fort Creek.

2. PHEGOPTERIS HEXAGONOPTERA (Michx.) Fée. Dryopteris hexagonoptera (Michx.) C. Chr.

BROAD BEECH FERN.

At the eastern border of our area. Otis, Ind. (Hill)
Woods of North Shore region, rare.

3. ADIANTUM PEDATUM L.

MAIDENHAIR FERN.

A common fern in rich woods, particularly abundant on steep banks.
Des Plaines valley, Niles, and North Shore; very local, southeast.
Always an evidence of a very rich and porous soil. A fine variety for the fern garden.

4. PTERIS AQUILINA (L.) Pteridium aquilinum (L.) Kuhn.

BRAKE. BRACKEN.

The most commonly distributed fern in our district. Especially vigorous southeast in the sand region. Rhizomes often ten to fifteen feet long. A specimen, from Rogers Park, had a twelve foot rhizome and was ultimately divided into sixty branches. This species is found on every considerable area of land throughout the earth.

Used for food, medicine, and as a fine ornamental.

5. PELLAEA ATROPURPUREA (L.) Link.

ROCK BRAKE. CLIFF BRAKE.

Face of limestone cliff west of the Des Plaines river, Lemont, Ill. (Hill) Near the Sag, in ravines. (Schontz)

Found on the Kankakee River, on the cliffs below Kankakee, as the next nearest station.

Always an evidence of limestone. Exceedingly abundant in the Driftless Area of northwestern Illinois. Common on the artificial "cliffs" of railroad cuts on the I. C. Ry.

6. CRYPTOGRAMMA STELLERI (Gmel.) Prantl.

SLENDER ROCK BRAKE.

Damp, shaded limestone ravine, Sag Bridge, Ill., on a southwest exposure. Found also at Kankakee. (Hill) Common in Jo Daviess Co., Ill. (Pepoon)

Found also in a similar ravine opposite Lemont, Ill. (Hill) Very rare and local. A very dainty fern and on account of its small size one easily overlooked.

7. WOODWARDIA VIRGINICA (L.) Sm. Anchistea Virginica (L.) Presl.

CHAIN FERN. MARSH BRAKE.

Open swamps, southeast, locally abundant, forming dense masses. Clarke Jc., Miller, Dune Park, Ind.

A strikingly conspicuous species of much beauty. Commonly misshapen by an insect larva that collects the leaf tips into balls.

One of our largest ferns, but not taking kindly to the fern garden.

8. ASPLENIUM PLATYNEURON (L.) Oakes.

EBONY FERN. EBONY SPLEENWORT.

Steep bluffy wooded banks of Fort Creek, north of Chesterton, Ind., frequent. The rarest of our ferns. Also at Dune Park. (Hill) Miller, Ind. (Bastin)

A very dainty species. Takes kindly to Wardian culture. In the south almost a weed along the highways, on every moist shaded clay bank.

The above creek between Mt. Tom and Tremont is its specially favored habitat.

Bastin locates it at Berry Lake, Ind.

9. ASPLENIUM ANGUSTIFOLIUM Michx. Asplenium pycnocarpon Spreng.

NARROW SPLEENWORT. WILD "BOSTON FERN."

Wheeler, Ind., in rich woods. Rare. (Hill) Woods near Thornton. (Hill)

A species of very local distribution, particularly delighting in shaded bluffs in rich mold.

Attains perfection in Berrien Co. in southwestern Michigan, where it is a common species.

10. ASPLENIUM ACROSTICHOIDES Sw. Athyrium thelypteroides (Michx.) Desv.

SILVERY SPLEENWORT FERN.

Rich and damp woods. A compartively rare fern, of easy cultivation. Pine and Clarke, Ind.

Near Glencoe. (Bastin)

A handsome species, of fragile build.

11. ASPLENIUM FILIX–FOEMINA (L.) Bernh. Athyrium Filix-foemina (L.) Roth.

LADY FERN. FEMALE FERN.

An abundant fern in woods, particularly of the Des Plaines and North Shore regions. Commonly cultivated. Our most common and widely distributed species. Exceedingly variable in size. Characteristically yellowish-green in tint.

12. CAMPTOSORUS RHIZOPHYLLUS (L.) Link.

WALKING FERN.

Rocky ravines, the Sag, the only locality. (Schontz) This location is just east of Delaney's ravine at the rock outcrop of the old Sag outlet.

At Lockport, at the margin of our plant area. (Hill)

Abundant northwest of Kankakee on the rock cliffs of Kankakee River. Very common in northwestern Illinois on limestone rocks.

13. POLYSTICHUM ACROSTICHOIDES (Michx.) Schott.

CHRISTMAS FERN

Rare, ravines of Glencoe, Winnetka and north. Also occasional on steep wooded banks, southeast. Becomes exceedingly abundant in Mich. and also frequent locally, as far west as Mt. Tom, north of Chesterton, Ind., at the eastern limit of our range. Easily cultivated in fern gardens.

The leaves are evergreen in large clusters.

14. ASPIDIUM THELYPTERIS (L.) Sw. Dryopteris Thelypteris (L.) Gray.

MARSH FERN. MARSH SHIELD FERN.

Exceedingly abundant in open marshes near Lake Michigan, north and northeast. Even more common in the Dune region of Indiana.

Varies much in size in open marshes and wooded swamps.

Easily grown in the fern garden without special care.

15. ASPIDIUM SIMULATUM Davenp. Dryopteris simulata, Davenp.

DODGE'S SHIELD FERN.

Tolleston, in boggy woods, 1909. (Umbach) Very rare and local. Commonly mistaken for the preceding. Abundant in southwest Michigan. Doubt has been expressed, by some good authorities, as to its presence in our region. Certainly found in Berrien Co., southwestern Mich., 20 miles beyond our limits.

16. ASPIDIUM NOVEBORACENSE (L.) Sw. Dryopteris Noveboracensis (L.) Gray.

NORTHERN SHIELD FERN. NEW YORK FERN.

Wooded banks in rich soil. Fine plants are found locally in many places through the sand regions. Some especially favorable places are in the moist woods of the Des Plaines valley from Riverside north. Seems to be confused with the Lady Fern.

17. ASPIDIUM MARGINALE (L.) Sw. Dryopteris marginalis (L.) Gray.

MARGINED SHIELD FERN. EVERGREEN WOOD FERN.

A rare and very local fern on damp wooded banks, Dune Park and eastward.

Near Miller, Ind. (Hill) Reaches perfection on the old wooded dunes of southwestern Michigan near Lake Michigan.

Used in medicine as a substitute for A. Filix-mas.

A very beautiful species, particularly so when in fruit.

18. ASPIDIUM GOLDIANUM Hook. Dryopteris Goldieana (Hook) Gray.

GOLDIE'S FERN.

Woods, Chesterton, Otis and eastward. Rare. (Cowles, Hill)

An unknown fern to nearly all of our collectors. Either overlooked or confused with other species.

19. ASPIDIUM CRISTATUM (L.) Sw. Dryopteris cristata (L.) Gray.

CRESTED SHIELD FERN.

A beautiful species, very local in boggy woods, Dune Park and eastward.

The most abundant locality is in a white pine tract one mile east of Dune Park.

20. ASPIDIUM SPINULOSUM (O. F. Müller) Sw. Dryopteris spinulosa (Müell.) Kuntze.

SHIELD FERN. FLORIST'S FERN.

Rich woods, southeast and north along Lake Michigan. Never common with us.

The common florist fern, coming largely from Michigan. Typical in Pine Swamp east of Dune Park. (Hill)

21. ASPIDIUM SPINULOSUM INTERMEDIUM (Muhl.) D. C. Eaton. Dryopteris intermedia (Muhl.) Gray.

COMMON FLORIST'S FERN.

The most common form of the species. In Pine Swamp east of Dune Park. (Hill)

Ravines of North Shore. Rare.

22. CYSTOPTERIS BULBIFERA (L.) Bernh. Filix bulbifera (L.) Underw.

BULBLET FERN. BLUFF FERN.

Ravines on rock at the Sag, very local; this being the chief locality. (Schontz)

Lemont, Ill., in limestone ravine, vigorous. (Hill) Also at Sag Bridge and Lockport.

An exceedingly abundant and robust fern in the cool and shaded rock ravines of northwestern Illinois.

A very handsome species.

23. CYSTOPTERIS FRAGILIS (L.) Bernh. Filix fragilis (L.) Underw.

FRAGILE FERN.

Rich woods of the Des Plaines valley and north, common. Our smallest species, very easy of cultivation.

Very abundant in the New Lenox region, near Joliet.

24. WOODSIA OBTUSA (Spreng.) Torr.

WOODSIA FERN.

Limestone ledge, Lemont. Scarce. (Hill) The one suitable station for this species, demanding, as it does, rocks and cliffs of limestone.

25. ONOCLEA SENSIBILIS (L.)

SENSITIVE FERN. OAK FERN.

Very common in low woods and marshes. The sporophylls or fertile leaves are striking. A universally distributed species, often seen in open places exposed to the full sunlight. The only fern that may ever assume the rôle of a weed. Reputed poisonous (?) to horses. In wet meadows this species and the Marsh Fern will persist for years.

26. ONOCLEA STRUTHIOPTERIS (L.) Hoffm. Matteuccia Struthiopteris (L.) Todaro.

OSTRICH FERN.

Low alluvial soils, somewhat shaded, along the Des Plaines, Du Page, and Calumet Rivers. Local.

Our finest fern. Most easy of cultivation. The sporophylls much resemble those of the last species.

West of Wilmette and Rogers Park (Hill) and in the Skokie Marsh.

Rapidly increases in numbers by means of its slender underground stolons.

ORDER 2—OSMUNDALES

OSMUNDACEAE

FLOWERING FERN FAMILY.

Large and coarse species of marshes and wet banks, with conspicuous fructification. Lacking the typical leaves of ferns.

Some 10 species of temperate regions, 3 being found with us.

27. OSMUNDA REGALIS L.

ROYAL FLOWERING FERN. ROYAL FERN.

Wet woods and swamp margins, very common, southeast. Local at Rogers Park and north. Attains a height of four feet. Young foliage bright colored and striking.

Does not respond well to cultivation.

28. OSMUNDA CLAYTONIANA L.

CLAYTON'S FLOWERING FERN.

Wet woods along the Des Plaines river. Similar localities southeast. Abundant locally.

A very large and striking fern, easy to cultivate, flourishing particularly on the east and north sides of houses, close to the building.



THE CROZIERS OF THE CINNAMON FERN (*Osmunda Cinnamomea*)
AS THE APRIL SWAMPS DISPLAY THEM

Wet woods, Rogers Park, west of the "ridge," in a locality abounding with rare plants, the trees being largely black gums and red maples. This choice spot has gone the way of all suburban plant retreats.

29. OSMUNDA CINNAMOMEA L.

CINNAMON FERN.

Our largest species. Very common southeast, where the varieties frondosa and incisa are also found. Rare at Rogers Park.

Well developed clumps are five feet in height, with ten to twenty leaves.

30. OSMUNDA CINNAMOMEA FRONDOSA Gray.

Found with the type in the Dune region. Rare.

31. OSMUNDA CINNAMOMEA INCISA J. W. Huntington.

Very rare in the Dune region. (Hill)

OPHIOGLOSSACEAE.

ADDER'S TONGUE FAMILY.

Woodland plants somewhat fern-like, without the coiled unfolding leaves, the roots fleshy and clustered, the fructification clustered in sporophylls. Five species grow in our area. There are about 70 for the world at large.

32. OPHIOGLOSSUM VULGATUM L.

ADDER'S TONGUE.

Damp grassy places bordering sloughs. Miller, Ind., only a few plants seen. Bogs near Wolf Lake near Sheffield, Ind., rare, but more abundant than at Miller. (Mrs. A. Chase)

The marsh border of this lake seems to be the last place where this interesting plant was found.

Quite abundant at a third station, north side of the Little Calumet River, Gary, Ind. (Hill)

Must be very rare or generally overlooked. The author has never "located" it. Most of the stations are now usurped by railroad or factory.

33. BOTRYCHIUM OBLIQUUM Muhl.

MOONWORT FERN. GRAPE FERN.

Open woods, particularly southeast. Very rare and local.

Birch and Tamarack Swamp, Mineral Springs, Ind. (Hill)

Mt. Tom, along the steep shaded bluff bordering Fort Creek. There are never more than two or three plants in any one place. Probably an overlooked species. Occasionally found in surprising localities, as on the open roadside at Port Chester, or on the summits of a "mound" in Jo Daviess Co.

34. BOTRYCHIUM OBLIQUUM DISSECTUM (Spreng) Clute. Botrychium dissectum. Spreng.

DISSECTED MOONWORT.

Grassy bank of ditch, along road just north of Port Chester, Ind. Very rare. A strikingly beautiful plant in autumn with its bronze foliage and rare fructification.

The locality seems to have lost the plant; not seen in 1914, 1915, 1916, 1917, 1920, or 1925.



PEPOON

A CINNAMON FERN IN AUGUST

FIVE AND ONE-HALF FEET

35. BOTRYCHIUM VIRGINIANUM (L.) Sw.

RATTLESNAKE FERN. GRAPE FERN.

A common species in very rich and rather damp woods. Very variable in size, from six inches to two feet.

The sterile leaf segment persists long after the sporophyll withers.

36. BOTRYCHIUM TERNATUM INTERMEDIUM (D. C. Eaton) B. Silaifolium Presl.

THREE-DIVIDED MOONWORT.

A rare plant in woods near Miller, Ind. Reported by Babcock and Hill but found by no other collectors.

ORDER 3—EQUISETALES

HORSETAILS AND SCOURING-RUSHES.

One genus of 25 species, very widely distributed and very ancient in time range. Ancient forms were largely coal plants, called Calamites.

There are 8 species in our area, all of which are contained in the following family.

EQUISETACEAE.

HORSETAIL FAMILY.

Rush-like plants with hollow, striate stems, jointed and often branched, with rudimentary scale-like leaves, and cone-like fructification. Stems annual or perennial. Moist or sterile ground plants.

37. EQUISETUM ARVENSE L.

HORSETAIL.

Very common in gravelly or clay soils. Abundant along streets and railways.

Seriously poisonous to horses and sheep. (Georgia) An evidence of worn-out soils. The fertile stems are an earliest sign of genuine spring, with their lavender-brown fruiting cones.

38. EQUISETUM PRATENSE Ehrh.

HORSETAIL.

Edgebrook in alluvial soils near the North Branch of the Chicago River. (Gates)

Common locally.

39. EQUISETUM FLUVIATILE L.

PIPES. SWAMP HORSETAIL.

Shallow water, very abundant along the borders of marshes, southeast.

40. EQUISETUM LAEVIGATUM A. Br.

SMOOTH SCOURING-RUSH.

Rich soil along streams and banks and borders of swales. Very abundant along the Des Plaines River, forming dense tangled mats on the steep banks.

Less common southeast, favoring damp, sandy borders of swamps.

41. EQUISETUM HYEMALE L.

SCOURING-RUSH.

Clay and sand banks where there is seepage. Railroad embankments, variable in size, common, particularly from Whiting, Ind., eastward.

Formerly used for scouring tinware and steel cutlery.

42. EQUISETUM HYEMALE ROBUSTUM (A. Br.) A. A. Eaton. E. robustum A. Br.

GREAT SCOURING-RUSH.

Wet woods, Thornton, Ill. Rare. (Hill)

Attains a height of four to five feet and a diameter of one-half inch. Our largest form.

43. EQUISETUM VARIEGATUM Schleich.

SMALL SCOURING-RUSH.

Very abundant on wooded banks along the sloughs southeast, from Clarke Junction to Dune Park and eastward. Dry hummocks in tamarack swamps are favorite habitats.

44. EQUISETUM SCIRPOIDES Michx.

SCIRPUS-LIKE SCOURING-RUSH.

Lake Forest and Lake Bluff, on moist banks. (Cowles)

ORDER 4—LYCOPODIALES

LYCOPODS, CLUB MOSSES.

Three families with about two hundred species. Very ancient in time. (Lycopodendrons, Sigillarias)

Our species number about eight, in two families, each with a single genus within our limits.

LYCOPODIACEAE.

CLUB MOSSES.

Evergreen, low habit plants with crowded moss-like leaves, living in deepest shade. Delight in the cool northern woods. Very rare in our area, and seldom numerous in individuals.

45. LYCOPODIUM LUCIDULUM Michx.

SHINING CLUB MOSS.

Cold damp woods south of Miller, Ind. Only one locality. Rare. Pine, Ind. (Hill) and Port Chester. On the bluffs of Fort Creek near Mt. Tom.

Originally in the Niles woods. (Hill, Johnson)

Woods north of Evanston. (Barnes)

46. LYCOPODIUM INUNDATUM L.

CLUB MOSS.

Found at South Evanston, Pine, Miller, and Tolleston near Lake Michigan. Abundant west of Port Chester on the South Shore Ry. right of way. (Umbach, Pepoon) Mineral Springs in sedge swamps. (Cowles)

47. LYCOPODIUM CLAVATUM L.

TRAILING GROUND PINE.

Found near Miller, Ind., by Higley. Not reported by others.

48. LYCOPODIUM OBSCURUM L.

GROUND PINE.

Pine and Miller, Ind., in woods. (Hill) Very rare.

49. LYCOPODIUM OBSCURUM DENDROIDEUM (D. C. Eaton) Michx.

GROUND PINE.

Shaded, damp woods near Miller, Ind. Rare. (Hill)

50. LYCOPODIUM COMPLANATUM L.

TRAILING GROUND PINE.

Sandy woods, Miller, Ind., Berry Lake, Ind. (Hill) Very rare.

Common northeast of Dune Park on steep wooded slopes. (Umbach, Pepoon)

SELAGINELLACEAE.

SMALL CLUB MOSSES. SELAGINELLAS.

Small moss-like plants. Two species are found in our area.

Many are grown in conservatories. One western species is often sold by street fakirs as the "Resurrection Plant," that will revive from its dry condition by adding water. Needless to say, the plant is generally dead, but does unfold and freshen.

51. SELAGINELLA RUPESTRIS (L.) Spreng.

SAND CLUB MOSS.

Dry sandy hillsides where exposed to the sun and wind. Dune Park. Very local. Very often overlooked. (Umbach, Pepoon)

Originally found from Cold Harbor, Ind., eastward. (Hill)

Common on the open semi-arid "Sand Prairie" of northwestern Illinois, where it simulates the "Resurrection Plant" above mentioned.

52. SELAGINELLA APUS (L.) Spreng.

MARSH CLUB MOSS.

Very common in the springy, grassy marshes along the Calumet River, southeast. Easily overlooked. Banks of sloughs, Dune Park, Miller, Clarke.

Exceedingly abundant northeastward into Michigan. Usually overlooked. One of our smallest plants.

Found at Evanston at an early date.

ISOETACEAE.

QUILLWORTS.

Small aquatic or bog herbs, grass or rush-like. Sporangia in bases of leaves.

Contains but one genus, Isoetes, of fifty species.

One species commonly submerged and hence usually overlooked.

53. ISOETES MELANOPODA. J. Gay.

QUILLWORT.

Wet prairies, Grand Crossing and south. Generally overlooked. Very local in distribution.

There may be other species but the plants are so insignificant or inaccessible that they are not seen.

SUB–KINGDOM—SPERMATOPHYTA

SEED PLANTS.

Reproduction by flowers and seeds.

The *highest* plant group, numbering some 150,000 species.

Represented in the United States by 12,000, and in the area of Gray's Manual by about 5,000 and in the Chicago Area by about 1,853 species.

There are two classes, Gymnosperms and Angiosperms.

KEY TO THE TREES AND SHRUBS OF THE CLASS GYMNOSPERMS (CONIFERS)

	Trees	19	
	Shrubs	23	
19	Leaves needle like, in bundles, fruit a cone	20	
19	Leaves awl shaped, fruit berry like	22	
19	Leaves overlapping, scale like, in 4 rows	Arbor Vitae	62
20	Leaves slender, short, in fascicles, soft, deciduous	Tamarack	60
20	Leaves slender, in bunches of 5	White Pine	54
20	Leaves stiff, in bundles of 2	21	
20	Leaves in 3's, 3–5″ long, dark, rigid	Pitch Pine	55
21	Leaves short, 2″ or less, curved, dark green	Jack Pine	57
21	Leaves larger, 2–3″, light green, nearly straight	Scotch Pine	58
21	Leaves long, 4–5″, dark green	Austrian Pine	59
21	Leaves short, stout, blue-green, 1½ to 2″ long, at times in 3's	Table Mountain Pine	56
22	Leaves all awl shaped	Juniper	63
22	Leaves of two kinds, awl shaped and short, scale like	Red Cedar	66
23	Shrub trailing extensively	Trailing Juniper	65
23	Shrub bushy-spreading	Dwarf Juniper	64

CLASS 1—GYMNOSPERMS

THE NAKED-SEED PLANTS.

CONIFERS AND THEIR ALLIES.

An ancient group, the seeds naked, covered with scales. Fruits usually cones.

The common "evergreens" of northern forests. A few forms in the southern hemisphere.

About 459 species, or 2½% of the North American species. There are 13 native and introduced species in the area.

Many ancient forms, as the Cordaites, were coal producing plants.

PINACEAE.

CONIFERS, PINE FAMILY.

Trees with resinous sap; mostly narrow, evergreen leaves, and fruits in the form of cones with few exceptions. 240 species, widely distributed. Of these 75 are pines proper, 14 are spruces, 9 are larches, 7 are hemlocks, 9 are firs, 15 are cedars, 30 are junipers and 75 are yews, the latter usually placed in a separate family, the TAXACEAE.

54. PINUS STROBUS L.

WHITE PINE.

A few large trees on the lake bluff at the north county line, near Glencoe; occasional in the Dunes southeast. The Glencoe specimens are eighty feet high with a trunk diameter of two feet.

Very few young trees are now seen in the sand region and the species will doubtless become extinct with us in a natural state.

It is said that previous to 1871 it was abundant in the neighborhood of Berry Lake, Ind., and was sawed into lumber, but during the fall of that year the whole area was burned over. There are yet left in the Dunes great stumps much decayed, evidently of this species, remnants of this original pine forest, that apparently occupied all the area at the south end of Lake Michigan.

55. PINUS RIGIDA Mill.

PITCH PINE.

A rare tree in the naturalized pine forest in the sand flats of Waukegan.

The next species explains the existence of this interesting pine moor.

56. PINUS PUNGENS (Michx.) Lamb.

HICKORY PINE. TABLE-MOUNTAIN PINE.

Numbers of trees associated with the Austrian pine in the pine woods on the sands near the mouth of Dead River, four miles north of Waukegan. These, with the Scotch and Austrian and perhaps others, were introduced many years ago by Mr. Douglass, the seed being sown from the back of a horse ridden over the sandy plain. (Umbach, Schontz, Gates, Pepoon, 1910) All the species are propagating naturally from seed, and if the tract were left undisturbed, a veritable pine forest would finally result.

57. PINUS BANKSIANA Lamb.

JACK PINE. GRAY PINE. SCRUB PINE.

Very abundant in the sandy and dune regions southeast; twenty to sixty feet, with a maximum trunk diameter of one foot. Nearest locality to Chicago is at Indiana Harbor. Rapidly becoming exterminated at its western border by smoke, cinders, dust of cement mills, and cutting off, as well as by frequent fires. This locality marks the extreme southern extension of the species, a relic of the glacial movement. Occurs also on Waukegan Sand-Moor. Specimens near Manistee, Mich., sixteen inches in diameter and seventy feet in height.

58. PINUS SYLVESTRIS L.

SCOTCH PINE. SCOTCH FIR.

Very abundant and thoroughly naturalized on the pine flats at Waukegan. Trees generally 25 to 30 feet in height, abundantly cone bearing. Our common cultivated species.

59. PINUS LARICIO AUSTRIACA L.

AUSTRIAN PINE.

The common naturalized pine on the pine flats at Waukegan. Thrifty and abundantly cone bearing. Often cultivated. Of all the introduced pines on this moorland this species grows most naturally and luxuriantly.

60. LARIX LARICINA (Du Roi) Koch.

LARCH. TAMARACK.

Several tamarack swamps are found in the region south and west of Miller, Ind., each a center of rare plants. A few trees, also, are found in the Waukegan sand flats, evidently the last of a more numerous assemblage.

An especially interesting swamp is the one near Mineral Springs, Ind., having an area of from thirty to forty acres. Incidentally the nearest habitat of the rattlesnake (massasauga) to the city of Chicago. A yearling was found here in October, 1915, another in 1918, two in 1920, and two in 1921.

It is rumored, in 1926, that this swamp is to be destroyed for suburban building activities. Let us hope the rumor is false.

61. LARIX DECIDUA Mill.

EUROPEAN LARCH.

Occasionally spontaneous, about towns and along railways where it is planted as a snow protection.

62. THUJA OCCIDENTALIS L.

WHITE CEDAR. ARBOR VITAE.

Frequent along the sloughs and abundant on some of the "islands" in the narrow lakes of Porter Co., Ind. Never of large size. A very few specimens on "springy bluffs" at Highland Park, along the shore of Lake Michigan. White cedars are always indications of rare plants unusual for the area. The nearest "cedar swamp" is in Cass Co., Mich., 100 miles east of Chicago, where trees occur two feet in diameter and 80 feet in height.

63. JUNIPERUS COMMUNIS L.

JUNIPER.

Abundant in the sand regions near Lake Michigan, both north and southeast. Never more than a tall shrub.

64. JUNIPERUS COMMUNIS DEPRESSA Pursh. J. Sibirica Burgsd.

MAT JUNIPER.

Abundant at Miller, Ind., and eastward, in the older dunes and sandy barrens. A strikingly peculiar evergreen, occasionally forming dense mats, 24 to 30 feet in diameter, and 2 to 3 feet in height.

Sand barren by lake north of Lake Bluff. (Hill)

65. JUNIPERUS HORIZONTALIS Moench.

TRAILING JUNIPER.

Very abundant on the Waukegan flats, forming veritable carpets of green, covering areas a rod or more in diameter and a vertical growth of one foot or less.

As late as 1905, a fine specimen was found on the sand ridge at the foot of Lawrence Ave., Chicago. (Pepoon)

A station at Lake Bluff with J. communis depressa. (Hill)

In its native region this is a very beautiful evergreen, with striking habit of growth, color of foliage and profusion of silvery blue fruits.

66. JUNIPERUS VIRGINIANA L.

RED CEDAR. SAVIN.

Common in the rough land southeast, and occurring as scattered bird-sown specimens throughout the Area. Especially fine specimens in the northern ravines at Glencoe, Ravinia, and Winnetka.

KEY TO THE HERBS OF THE CHICAGO REGION

THE MONOCOTYLEDONS

	Flowers borne on a fleshy axis (spadix) enclosed commonly by a special leaf, spathe . . .	Arum F	IV
	Flowers variously arranged, not as above . . .	A	
A	Very small floating plants, without true leaves	Duckmeats B	
A	Larger plants of various habits, with true leaves, except in Nos. 1, 2, 3 of the orchids .	F	
B	Plant, an oval or elliptical green, grain-like body, $\frac{1}{16}''$ long; flowers exceedingly minute .	Wolffia	465
B	Plant, a flattened thallus, oblong to lanceolate.	C	
C	Thallus purple beneath with a cluster of rootlets	Great Duckmeat . . .	461
C	Thallus with a simple rootlet.	D	
D	Thalli longstalked, lanceolate, usually several attached to each other	3-Parted Duckmeat. . .	462
D	Thalli with short or no stalks, oblong to elliptical	E	
E	Unsymmetrical, very small, $\frac{1}{8}''$, often purplish beneath	Least Duckmeat . . .	463
E	Symmetrical, larger, $\frac{1}{5}''$, ovate to circular. .	Small Duckmeat . . .	464
F	Leaves very long, narrow, flat; flowers very small in long dense cylindric spikes	G	
F	Leaves various, occasionally elongate, inflorescence otherwise	H	
G	Leaves 1″ broad, spikes dark brown; generally distributed	Cat-tail	67
G	Leaves $\frac{1}{2}''$ broad, spikes light brown; very local .	Cat-tail (Narrow Leaved) .	68
H	Plants strictly aquatic or bog dwellers; plant body various.	I	
H	Plants grass-like in foliage, usually not purely aquatic; flowers very small, not conspicuous.	P	
H	Plants commonly with expanded leaves; flowers usually 3 parted, conspicuous	R	
I	Bog plants with rounded, elongate, slender leaves; flowers very small in racemes. . .	Triglochin	97–98
I	Plants otherwise, aquatic or marsh dwellers .	J	
J	Plants wholly immersed	K	
J	Shoal water or marsh plants	L	
K	Leaves long and ribbon-like in root cluster. .	Eel Grass	105
K	Leaves small, lanceolate, crowded, opposite or whorled	Elodea	104
K	Leaves various, scattered or opposite, on branched deep-immersed stems; flowers spicate	Pondweed Family* . .	73–95
L	Leaves elongate; flowers monoecious, in dense globose heads	Bur-reed Family* . .	69–72

*Consult manuals of botany to determine the different species. All these plants are very difficult to separate by simple keys.

L	Leaves various; flowers perfect, monoecious, or dioecious, in racemes or panicles	M	
M	Leaves narrow, grass-like; flowers white	Grass Arrow Head	102
M	Leaves broader, often large	N	
N	Leaves narrow to broad, ovate; flowers white, small paniculate	Water Plantain	103
N	Leaves always or often with basal lobes	O	
O	Leaves large, variously arrow-shaped, ribbed	Great Arrow Head	99
O	Leaves commonly long to oval, thick with occasional lobes	Rigid Arrow Head	101
P	Stems usually hollow with solid nodes; leaves usually elongate, sheathing	Grass Family*	106–272
P	Stems solid	Q	
Q	Flowers with 6-parted dry perianth; inflorescence in corymbs or panicles	Rush Family*	477–495
Q	Flowers with a perianth of bristles or scales; flowers in spikes or spikelets, variously clustered	Sedge Family*	273–455
R	Flowers irregular, often very much so	S	
R	Flowers regular	V	
S	The ovary inferior, the lower petal modified into a lip	Orchid Family	V
S	The ovary superior	T	
T	Ovary enclosed in calyx base; flowers 2-lipped, blue, ephemeral, aquatic	Pickerel-Weed	474
T	Ovary not enclosed, not 2-lipped, not aquatic	U	
U	Plants of yards and waste places; bracts of spathe not united	Wandering Jew	472
U	Plants of sandy wilds; bracts of spathe united	Day Flower	473
V	Flowers with ovaries superior	W	
V	Flowers with ovaries inferior	a	
W	Flowers small, yellow; leaves 2 ranked; stamens 3; bog and shore plants	Yellow-Eyed Grass	467–468
W	Flowers and plants otherwise	X	
X	Perianth of green sepals and colored petals	Y	
X	Perianth with parts similarly colored, often very conspicuous	Lily Family	II
Y	Leaves broad, netted-ribbed	Trilliums	I
Y	Leaves narrow, parallel veined; flowers in umbels	Z	
Z	Leaves bright green; pedicels villous, with non-glandular hairs; blue	Spiderwort	471
Z	Leaves glaucous; pedicels smooth; flowers blue	Spiderwort	470
a	Stamens 6; flowers yellow; grass-like foliage from solid bulb	Star Grass	536
a	Stamens 3	Iris Family	III

I. TRILLIUMS.

Leaves three only, in a whorl at top of stem.	
Flowers sessile, red or greenish red	A
Flowers peduncled, white or pink with age	C

* Consult manuals of botany to determine the different species. All these plants are very difficult to separate by simple keys.

A	Leaves sessile; flowers greenish purple; sepals erect or spreading	Sessile Trillium	522
A	Leaves petioled; flowers deep red-purple; sepals recurved	Red Trillium	523
C	Flowers declined beneath the broad leaves; perianth with recurved parts	D	
C	Flowers borne above the large leaves, open, bell-shaped, very large	Great Trillium	524
D	Flowers ill scented, large; leaves very large and broad	White Trillium	526
D	Flowers small; perianth much rolled	Nodding Trillium	525
	Leaves in two whorls, distant—the lower 4–10, the upper 3–5; flowers greenish yellow.	Cucumber Root	521

II. LILY FAMILY, including BUNCH FLOWER, LILY OF THE VALLEY, AND SMILAX.

	Note.—For the Species of Smilax see the Vine Key		528–534
	Flowers dioecious in axillary umbels, very ill scented	Carrion Flower	530
	Flowers perfect.	A	
A	Leaves scale-like, small, the leaf-like branches filiform	Asparagus	512
A	Leaves of ordinary forms	B	
B	All leaves radical, seeming to come from root	C	
B	Leaves plainly borne on stems	K	
C	Plants with a strong onion odor	D	
C	Plants without strong onion odor	F	
D	Leaves broad and not elongate; earliest spring, dying off later	Leek	499
D	Leaves narrow, linear, elongate	E	
E	Flowers umbel nodding; without bulblets	Wild Onion	500
E	Flowers umbel erect; with numerous bulblets	Wild Garlic	501
F	Leaves narrow, linear, elongate	G	
F	Leaves short and broader, lanceolate to oval	H	
G	Leaves ⅓″ to ¾″ wide, yellow green, long and large; flowers large, orange	Day Lily	502
G	Leaves ⅛″ to ⅓″ wide, slender; flowers medium, pale blue	Quamash	510
H	Leaves mottled green or purplish; flowers nodding, large	I	
H	Leaves unmottled	J	
I	Flowers yellow	Yellow Erythronium	508
I	Flowers white to pale violet	White Erythronium	509
J	Leaves lanceolate, yellow green; flowers spicate, white	Colic Root	527
J	Leaves large, oval; flowers umbelled, greenish-yellow, fruit blue	Clintonia	513
K	Leaves narrow, linear	L	
K	Leaves broader, lanceolate to oval	M	
L	Stem viscid with black hairs; flowers small, white	Asphodel	496
L	Stem not viscid; leaves numerous; flowers large, erect, orange	Meadow Lily	504
M	Leaves strongly perfoliate; flowers yellow, nodding	Bellwort	497–498

M	Leaves not thus perfoliate; flowers not yellow	N	
N	Leaves broad, cordate, usually 2; flowers small, white, 4 parted	May Flower	517
N	Leaves not cordate, three or more on stem	O	
O	Flowers small, terminal or axillary, white or green	P	
O	Flowers large, terminal, yellow or orange	T	
P	Flowers terminal, white	Q	
P	Flowers axillary, green or greenish white	S	
Q	Flowers panicled; berry red, aromatic	False Spikenard	514
Q	Flowers in racemes	R	
R	Leaves 2–4, broad, lanceolate	False Solomon's Seal	516
R	Leaves many, narrow, lanceolate	False Solomon's Seal	515
S	Leaves large, smooth, 6″; flowers 1–8 in cluster, pale green white	Solomon's Seal	519
S	Small, pubescent; leaves 4″; fls. 1–4 in cluster, green	Solomon's Seal	518
T	Flowers with much yellow, recurved, bell-form; eastern, doubtful here	Canada Lily	507
T	Flowers without yellow, tightly recurved	Turk's Cap Lily	506

III. IRIS FAMILY.

b	Flowers large, blue and yellow; sepals bearded; leaves sword-shaped	Blue Flag	537
b	Flowers small, blue to white; leaves grass-like	c	
c	Flower spathe double; stem winged; flowers pale	Pale Blue-Eyed Grass	540
c	Flower spathe single	d	
d	Stem simple, bearing one terminal spathe and umbel	Blue-Eyed Grass	542
d	Stem usually branched above, with two or more stalked spathes and umbels	Blue-Eyed Grass	543

IV. ARUM FAMILY.

	Leaves divided	A	
	Leaves undivided	B	
A	Leaves large, 3 parted, spathe green or purplish streaked	Jack in the Pulpit	456
A	Leaves large, 5–17 parted; spathe green; spadix greatly elongated	Green Dragon	457
A	Flowers spirally arranged, white, small	Ladies' Tresses	565, 566
B	Leaves elongate, sword-shaped, yellow-green; spathe inconspicuous	Calamus	460
B	Leaves broad and large	C	
C	Leaves arrow-form or hastate; spathe green; aquatic	Water Arum	458
C	Leaves very large, ovate, strongly ribbed; spathe lurid green-purple	Skunk Cabbage	459

V. ORCHID FAMILY.

	Plants at the time of flowering almost without foliage leaves or permanently destitute of them	A	
	Plants with foliage at flowering time—No. 573 an exception	C	

A	Flowers distinctly spotted with purple, a white 3-lobed lip	Spotted Coral Root	569
A	Flowers not spotted, purplish or the lip somewhat spotted, if entire	B	
B	Flowers very small, lip entire	Small Coral Root	
B	Flowers very small, lip unspotted with small side teeth	Early Coral Root	568
C	Leaves all basal	D	
C	Leaves one to numerous borne on the stem	M	
D	Leaves green with white veins and reticulations; flowers white	Rattlesnake Plantain	567
D	Leaves shades of green	E	
E	Flowers with shades of red	F	
E	Flowers with shades of greenish or green	K	
F	Leaf solitary, linear	G	
F	Leaf broad, lanceolate to elliptical	H	
G	Flowers crimson, lip beautifully bearded with yellow and magenta	Calopogon	563
G	Flowers rose-purple, solitary, lip slightly fringed, unbearded	Arethusa	564
H	Flower distinctly moccasin-form, large; leaves two	Moccasin Flower	549
H	Flowers not moccasin shaped	I	
I	Leaf one, persisting through winter, often absent at flowering; flowers spotted	Putty Root	573
I	Leaves two	J	
J	Flowers rose-purple and white, 2–7, showy	Showy Orchis	550
J	Flowers madder purple, 5–15	Twayblade	571
K	Leaf one, small, oblong; flowers small, greenish	Small Orchis	555
K	Leaves two	L	
L	Large and appressed to ground, orbicular shining	Hooker's Orchis	556
L	Medium and ascending, yellow green	Twayblade	572
M	Flowers moccasin or slipper form	N	
M	Flowers not shaped thus	Q	
N	Flowers large, leaves large, hairy	O	
N	Flowers medium or small	P	
O	Flowers yellow, more than 1″ long as to lip but little fragrant	Yellow Lady's Slipper	546
O	Flowers pink with much white on perianth, very large	Showy Lady's Slipper	548
P	Flowers white, delightfully fragrant, very small	White Lady's Slipper	547
P	Flowers yellow, 1″ or less, fragrant, perianth with red brown	Small Yellow Lady's Slipper	545
Q	Flowers yellow in some shade, or orange or greenish yellow	R	
Q	Flowers red in some shade	S	
Q	Flowers white or greenish	T	562
Q	Flowers green	V	
R	Flowers small not fringed	Yellow Green Orchis	552
R	Flowers large, deeply fringed, orange yellow	Yellow Fringed Orchis	557
S	Flowers many in a raceme, deeply fringed, leaves several	Purple Fringed Orchis	560
S	Flower one, pink to white; leaf single, lance-ovate	Pogonia	561

T	Flowers fragrant in a spiral spike	Ladies' Tresses	566
T	Flowers not spirally arranged	U	
U	Flowers large, very deeply fringed, fragrant, spur 1½″ long	White Fringed Orchis . .	559
U	Flowers medium, deeply fringed; spur ⅔″ long	Small Fringed Orchis . .	558
V	Leaves one or two, small; plant small . . .	W	
V	Leaves several, plants medium to large . . .	X	
W	Leaf one, ovate elliptic; lip long, pointed; flowers minute	Adder's Mouth	570
W	Leaves one or two, oblong; lanceolate; flowers small; lip trifid	Bog Orchis	555
X	Lip 3 parted; flower bracts 2–4 times length of flower	Bracted Orchis	551
X	Lip entire; bracts not enlarged; tall leafy plants	Y	
Y	Lip lanceolate; flowers very numerous . . .	Northern Orchis	553
Y	Lip rhomboidal at base; similar	Northern Orchis	554

CLASS 2—ANGIOSPERMS

The Enclosed-Seed Plants

TRUE FLOWERING PLANTS. (Ovules enclosed in an ovary.)

North America, north of Mexico, has 195 families, and 16,253 species of Angiosperms.

The Chicago Area has 107 families and 1840 species.

SUB-CLASS—MONOCOTYLEDONS

Seeds with one cotyledon; vascular bundles not concentric; leaves usually parallel veined, flowers commonly 3-merous.

Our Flora has 503 species in the Sub-class.

ORDER 1—PANDANALES

SCREW PINES AND ALLIES.

Two families in the United States, the Cat-tails and Bur-reeds, with ten species in each.

Ours are aquatic plants with rush-like foliage, of little economic value, the leaves of cat-tails occasionally used for mats and baskets.

Note:—The Great War brought the cat-tail into prominence, its rhizomes yielding large quantities (90 tons per acre) of a good bread flour and its "down" used as a substitute for cotton.

TYPHACEAE.

CAT-TAIL FAMILY.

Marsh plants with long rush-like leaves and small flowers in dense spikes.

Ten species of temperate and tropical regions, two with us.

67. TYPHA LATIFOLIA L.

COMMON CAT-TAIL.

Very abundant in marshes and about the margins of ponds and sluggish streams.

Leaves used for mats and woven-work by foreign peoples.

A species found in all countries in temperate latitudes.

68. TYPHA ANGUSTIFOLIA L.

NARROW LEAVED CAT-TAIL.

Common locally southeast. Particularly abundant in the marshes surrounding Stony Island. Much more graceful than the above.

Skokie Marsh, Glencoe, rare. (Bab.) (Sherff)

Norwood Park to Des Plaines. (Pepoon)



PEPOON

CAT-TAIL FLAGS (*Typha latifolia*)

SPARGANIACEAE.

BUR-REEDS.

Marsh herbs with narrow 2-ranked leaves and small flowers in globular heads.

10 species of temperate and cold regions, 4 within our limits.

69. SPARGANIUM EURYCARPUM Engelm.

BUR-REED.

Marsh and pond borders, generally in shoal water, common locally, particularly abundant southeast.

70. SPARGANIUM AMERICANUM ANDROCLADUM (Engelm.) Fern. and Eam. S. androcladum. (Engelm.) Morong.

COMMON BUR-REED.

In similar locations, not abundant. Probably confused with the above.

71. SPARGANIUM SIMPLEX Huds.

SIMPLE STEMMED BUR-REED.

Borders of ponds and sloughs, S. Chicago to Dune Park, not common.

72. SPARGANIUM MINIMUM Fries.

SMALL BUR-REED.

Ponds and streams, southeast, rare. Pine, Clarke. (Hill) Easily overlooked.

ORDER 2—NAJADALES

PONDWEEDS.

Four families, the Pondweeds, Arrow Grass, Arrow Leaf, and Eel Grass.

Aquatic plants or plants of bogs and marshes, usually with insignificant flowers. Often largely submerged. Generally slighted by the average botanical collector.

NAJADACEAE. Zannichelliaceae. Dumort.

PONDWEED FAMILY.

Commonly aquatic, with green flowers in spikes or clusters.

POTAMOGETON (Tourn.) L.

PONDWEED. (Arranged by Prof. E. J. Hill.)

With the characters of the family. (See above.) 22 species in the area have been located.

73. POTAMOGETON NATANS L.

COMMON PONDWEED.

Common in quiet, rather deep waters, throughout. One of the conspicuous forms.

74. POTAMOGETON AMERICANUS C. & S. P. lonchites Tuckerm. P. fluitans Man. Ed. 6.

LONG-LEAVED PONDWEED.

Calumet and Des Plaines rivers, frequent. Usually growing, with very long stems, in deep water. (Hill)

75. POTAMOGETON RECTIFOLIUS Benn. Potamogeton alpinus x americanus.

ERECT-LEAVED PONDWEED.

Railway ditches near Stony Island. (Hill, 1901.)

An infertile hybrid found by Prof. Hill and Bennett in 1901.

76. POTAMOGETON PULCHER Tuckerm.

SPOTTED PONDWEED.

Local in one pond between Pine and Clarke, Ind., near the county road, 1883–85. No late record. (Hill)

Dune Park in ditch, 1891. (Hill)

77. POTAMOGETON AMPLIFOLIUS Tuckerm.

LARGE-LEAVED PONDWEED.

Ditches along the railways from Englewood south and east. (Hill)

Calumet River.

The stems are often branching and floating leaves frequently absent.

78. POTAMOGETON ILLINOENSIS Morong.

ILLINOIS PONDWEED.

Leaves generally not very large, smaller, on the whole, than those of P. amplifolius; stipules blunt. Lake Calumet, in water two feet or more deep, at Pullman. August 27th, 1890. (Hill. Babcock)

79. POTAMOGETON HETEROPHYLLUS Schreb.

VARIABLE PONDWEED.

Ditches, S. Chicago. (Hill) Des Plaines River near Riverside. (Higley) Pine and Miller, Ind. Calumet River.

A species exceedingly variable, especially in the shape and size of its floating leaves and the number of its submerged flowers, these sometimes being few, but often very numerous and differing considerably in size. Specimens collected at Pine Station, Ind., have the fruit plainly keeled. (Hill)

80. POTAMOGETON ANGUSTIFOLIUS Berchtold. & Presl.

NARROW-LEAVED PONDWEED.

Eastward from South Chicago, having about the same range as P. lucens, and as common, especially at Pine, Ind. (Hill)

Late in the season the plant sends up branches bearing immersed and shining leaves, by the lengthening of the stem beyond the earlier immersed ones, that at this time are submerged. (Babcock)

81. POTAMOGETON LUCENS L.

SHINING PONDWEED.

Frequent in the small lakes and sloughs from South Chicago eastward.
Found also in the Skokie Marsh.
One of our most common species.

82. POTAMOGETON RICHARDSONII (Benn.) Rydb. P. perfoliatus Richardsonii. A. Bennett.

RICHARDSON'S PONDWEED.

Common in the Calumet River and sloughs southeast of Chicago. (Hill)

Quite variable in the length of the leaves, from 1½ to 3¾ inches, those of the lower part of the stems are commonly shorter. All the plants collected from this vicinity, and nearly all throughout the West, are of the P. perfoliatus variety, and there seems to be no true "perfoliatus" in our region. (Hill)

83. POTAMOGETON ZOSTERIFOLIUS Schum. P. compressus L.

EEL GRASS PONDWEED.

Calumet River and adjacent ditches. Des Plaines River, frequent.
Abundant in the Du Page River.
One of the common species of rapidly flowing streams.

84. POTAMOGETON FRIESII Rupr. P. mucronatus Man. Ed. 6.

FRIES'S PONDWEED.

Common in the '80s in ditches at South Chicago. Apparently largely exterminated, or overlooked. (Hill)

Much resembling P. pusillus.

85. POTAMOGETON STRICTIFOLIUS Benn. P. pusillus pseudo-rutilus Benn.

STIFF-LEAVED PONDWEED.

South end of Wolf Lake. The only locality. (Hill)

86. POTAMOGETON PUSILLUS L.

SMALL PONDWEED.

Ditches, South Chicago (Hill) and south of Englewood.

In both localities will be found forms with the leaves almost setaceous. (var. tenuissimus. Koch.)

A common species.

87. POTAMOGETON VASEYI Robbins.

VASEY'S PONDWEED.

Lakes south of Chesterton. (Cowles)

88. POTAMOGETON FOLIOSUS Raf.*

LEAFY PONDWEED.

Very common throughout in shallow waters, ponds, ditches and sloughs.

Our most abundant species. The forms in our vicinity nearly all approach the following variety, generally being plainly 3-nerved.

89. POTAMOGETON FOLIOSUS NIAGARENSIS (Tuckerm.) Morong.

NIAGARA PONDWEED.

Same range as P. foliosus, generally in running water. Leaves larger, 3–5-nerved. (Hill)

90. POTAMOGETON HYBRIDUS Michx. P. diversifolius Raf.

VARIOUS-LEAVED PONDWEED.

Frequent in Goose Lake near Dune Park. (Hill) The only station. The lake is about one mile northeast of the station. At present (1926) the lake is almost converted into a marsh.

*This species, like several other Potamogetons, is quite variable and the type and variety imperceptibly grade into one another. It sometimes occurs with hair-like stems, barely a foot in length and with fine short leaves (Manistee, Mich.) or with stems two to four feet long and with leaves 3 to 5 nerved (as in the rapid water of the Pine River, at Poysippi, Wis., where it is a var. niagarensis). Those found in our limits are somewhat intermediate, the extremes of size not yet having been found. None of the forms collected by us in the West exactly agree with the type of the var. niagarensis, which grows in the mill race at Niagara Falls, near the Cataract House.

91. POTAMOGETON PECTINATUS L.

COMB PONDWEED.

Ponds, South Chicago. (Hill) Common in ditches, sloughs, and streams of the Calumet basin.

A very commonly distributed species along the Des Plaines and Du Page rivers.

The forms from the Calumet had one character (quite distinctive of P. pectinatus, and somewhat unique among Potamogetons) in abundance. They were well provided with bulbs or tubers on the creeping underground stem. These appear in the Fall (have been detected as early as August 23d) and serve to make the species perennial. The slender axis joining the bulbs usually perishes, leaving them to start a new growth in the Spring. Sometimes they become detached and float in the water, but readily sink when the water is still. They abound in starch and serve to nourish the young plant. They seem especially numerous on the broad-leaved forms and may take the place of fruit. Irmisch in his work (Ueber einige Arten aus der naturlichen Pflanzenfamilie Potameen, Berlin, 1858), gives a good description of them, with excellent figures, in an elaborate account of P. pectinatus. He compares these tubers or bulbs (Knolle) to those of Crocus and Gladiolus, and in their function of propagating the species to those of Scirpus maritimus and Cyperus esculentus, among Monocotyledons, and among Dicotyledons to the tubers of the potato and Stachys palustris. (Hill)

92. POTAMOGETON INTERRUPTUS Kitaibel.

INTERRUPTED PONDWEED.

Found in the Calumet River at South Chicago in 1881. (Hill) Overlooked or exterminated.

93. POTAMOGETON ROBBINSII Oakes.

ROBBINS' PONDWEED.

Merry Lake, Ind., beside the causeway crossing the lake. (Hill, 1892)

94. ZANNICHELLIA PALUSTRIS L.

HORNED PONDWEED.

Ditches and shoal waters, South Chicago and Calumet Region. Not common except locally in some ditches. (Hill)

Found near Cheltenham Beach, rare. July 16, 1888. (Form with fruit nearly sessile.) The form with the peduncled fruit is more common but intermediate forms occur so that the distinctions on which var. pedunculata, Gray, are founded do not hold. (Hill)

95. NAJAS FLEXILIS (Willd) Rostk. & Schmidt.

NAIAD.

Placed in a Family separate from Pond-weeds by Asche.

Ponds and slow streams of the Calumet regions, frequent. Generally deeply submerged, often in water five to ten feet deep. Becoming very abundant as one goes eastward from our limits. Very common in the marl lake of southwest Michigan. Called "Perch Weed" by residents.

JUNCAGINACEAE. Scheuchzeriaceae, Agardh.

ARROW GRASS FAMILY.

Marsh herbs with slender terete leaves and minute spiked or racemed flowers.

Widely distributed plants with about 10 species known, 3 in our region.

96. SCHEUCHZERIA PALUSTRIS L.

SCHEUCHZERIA.

Bogs south of Miller, very rare. (Bast.) A bog plant extending around the earth in north temperate regions.

Found at Miller station by Umbach and the author.

97. TRIGLOCHIN MARITIMA L.

ARROW GRASS.

Bogs, ponds and stream borders, frequent. Circumpolar in temperate regions.

98. TRIGLOCHIN PALUSTRIS L.

ARROW GRASS.

Much more abundant than the last species, particularly southeast.

Circumpolar in distribution.

ALISMACEAE.

WATER-PLANTAIN FAMILY.

Marsh herbs with large ribbed leaves and white flowers on scapes.

About 70 species in 13 genera, of wide distribution, 5 found with us.

99. SAGITTARIA LATIFOLIA Willd. S. variabilis Engelm.

ARROW-HEAD. ARROW-LEAF.

Very common and represented by the three forms, hastata, gracilis, and diversiloba. The first is the common one. It is possible that form obtusa may also occur. A form with double flowers was found at Hinsdale by Mr. C. J. Fellows (Babcock) and a few similar specimens were collected near Pullman in 1885.

100. SAGITTARIA ARIFOLIA Nutt. S. cuneata Sheldon.

ARUM-LEAVED ARROW-HEAD.

Shallow water of Bangs Lake near Wauconda. (Hill) This is barely within our limits of the 45-mile radius but is not in the physiographic area.

101. SAGITTARIA HETEROPHYLLA Pursh. S. rigida Pursh.

STIFF ARROW-HEAD. RIGID ARROW-HEAD.

Frequent in ponds southeast. Very variable as to foliage.

Var. angustifolia Engelm., at Miller, Ind.

Var. rigida Pursh, Calumet River, Miller, to South Chicago.

102. SAGITTARIA GRAMINEA Michx.

GRASS-LEAVED ARROW-HEAD.

Particularly common in the prairie ponds west and northwest. Abundant near Wheaton.

S. graminea forma cristata Engelm. is found at West Chicago. (Umbach) Found in the ponds and ditches, southeast, of frequent occurrence.

103. ALISMA PLANTAGO-AQUATICA L. A. subcordatum Raf.

WATER PLANTAIN.

Ponds and ditches, abundant. Very variable in size, from four inches to three feet.

HYDROCHARITACEAE. Vallisneriaceae.

FROG'S BIT FAMILY. EEL GRASS FAMILY.

Aquatic herbs, with minute imperfect flowers. 40 species, of wide distribution. Only 2 with us.

104. ELODEA CANADENSIS Michx. Philotria. Anacharis.

WATER-WEED.

Common in streams. Des Plaines, Calumet, Chicago rivers, and ditches and canals. Varies much with seeming varietal differences.

A form growing in the north branch of the Chicago River has thin pellucid elongated leaves, very distinct from the ordinary form. Answers exactly the description of Engelmann's Udora canadensis minor.

A very valuable plant for the aquaria. The white pistillate flowers are very long-tubed when blooming within doors.

105. VALLISNERIA SPIRALIS L.

EEL GRASS.

Calumet River and some of the smaller streams southeast, common. Occasional elsewhere.

Des Plaines River, Maywood, Riverside, Willow Springs. (Moffatt) Often in deep water. Du Page River near Naperville.

Abundant along the Atlantic Coast, and there called "Wild Celery." The food of sea ducks.

Of cosmopolitan occurrence in both salt and fresh water.

Grasses and Sedges

These plants are very difficult of determination by means of Analytical Keys, requiring strong lens, a good eye, careful discrimination, and extended observation for correct results. It is, however, easy to distinguish both grasses and sedges from other plants and from each other by simple characters. This is all that will be attempted here.

Many of the grasses and sedges are very ornamental, numbers are cultivated and numerous wild species are gathered for "winter bouquets" and other purposes.

GRASSES—Stems jointed, usually hollow, with sheathing, elongated parallel veined leaves. Flowers enclosed in scales, without petals or sepals, very commonly lacking in flower features, as generally understood. Fruit a seed-like grain.

SEDGES—Stems not ordinarily conspicuously jointed, always solid, commonly triangular in section. Leaves much as in Grasses. Flowers are usually inconspicuous.

ORDER 3—GRAMINALES

GRASS-LIKE PLANTS.

Two great Families, very similar in physical appearance, but vastly different in importance. The GRASS of paramount value and the SEDGE almost valueless. Both have grass-like or elongated narrow leaves and clustered insignificant flowers.

GRAMINEAE.

GRASSES.

A very large family of grass-like forms with insignificant flowers, very difficult of study. 168 species and varieties are found in the Area, out of 3500 for the world at large. The most useful of families furnishing the cereals. Our species of little importance except a few for hay.

106. ANDROPOGON SCOPARIUS Michx. Schizachyrium scoparium (Michx.) Nash.

BUNCH GRASS.

Common on sandy barrens and dry sandy soils throughout. Barren clay knolls. Very abundant grass on western plains.

107. ANDROPOGON FURCATUS Muhl.

BLUE-JOINT BEARD GRASS.

Swale borders and original prairies, very generally distributed. Very abundant on dry prairies before cultivation destroyed the plant. Early settlers used it largely as a coarse hay grass.

A common fence row grass of Illinois, always indicative of a bit of the original sod.

108. ANDROPOGON VIRGINICUS L.

BROOM-SEDGE.

Reported from Evanston by Mr. Shipman.

109. SORGHASTRUM NUTANS (L.) Nash.

WOOD GRASS. INDIAN GRASS.

Very abundant along the borders of sand ridges and swales southeast. Elsewhere not common. A fine grass, often growing 6 feet in height, handsome in flower.

110. SORGHUM HALAPENSE (L.) Pers. Holcus Halepensis L.

JOHNSON GRASS.

Waste land of Glencoe, 1907. (Gates) A common forage grass of the Gulf States. Known in the south as the Billion-Dollar Grass.

Originally, until the winter of 1905, common on the Wabash Ry. fill south of Miller, Ind. This extreme winter destroyed many immigrant plants that had persisted for years. Three fourths of the Opuntias were killed.

DIGITARIA. Panicum. Syntherisma.

Various scientific names have at different times been given to these grasses, that are collectively called "Crab" or "Finger" grasses.

111. DIGITARIA HUMIFUSA Pers. Syntherisma Ischaemum (Schreb.) Nash. Panicum lineare. P. glabrum.

SMALL CRAB GRASS.

Cultivated and waste places, common locally.

112. DIGITARIA SANGUINALIS (L.) Scop. S. sanguinale (L.) Dulac. P. sanguinale L. Syntherisma Nash.

CRAB GRASS. FINGER GRASS.

Very abundant in gardens and a grave menace in lawns. Rapidly becoming a nuisance although late investigation seems to give it large restorative virtues, when plowed under in poor soils, acting as a green manure of marked value.

113. LEPTOLOMA COGNATUM (Schultes) Chase. Panicum autumnale Bosc.

SAND BUNCH GRASS.

Sand ridges south of Whiting, Ind., rare. Does not appear to be noticed by late collectors. Locality built over now and station destroyed.

Dune Park and eastward, not uncommon in southwestern Michigan.

114. PASPALUM SETACEUM Michx.

SLENDER PASPALUM.

Miller, Ind., in sand; very rare. (Umbach)

THE GENUS PANICUM.

A very large and very difficult genus, lately thoroughly revised by Hitchcock and Chase. This revision is used for the species here recorded. Of the 216 N. American species named we have 33 in our Area.

Numbers in ( ) are Manual, 7th Ed. species numbers.

115. PANICUM VERRUCOSUM Muhl. (2)

WARTY PANIC GRASS.

Sandy wet soils, Miller and Dune Park, Ind.

Very abundant north of Goose Lake. (Hill)

Prof. Umbach reports it as very frequent southeast.

Abundant in southwestern Michigan and adjacent Indiana localities.

116. PANICUM CAPILLARE L. (3)

OLD-WITCH GRASS. TUMBLE GRASS.

Common in waste places, gardens, roadsides. One of our most abundant weeds, assuming the characteristics of a tumble weed.

117. PANICUM FLEXILE (Gattinger) Scribn. (5)

WIRY PANIC GRASS.

Abundant along the sandy swales from Clarke eastward. Common at Miller, Ind., north of the Lake Shore Ry. (Umbach)
South Chicago. (Hill) Irondale. (Chase) Waukegan moorland. (Umbach)

118. PANICUM MILIACEUM (L.) (7)

MILLET.

Along the outer Belt Ry. near La Grange, several specimens.
Woodlawn. (Millspaugh) Beach, north of Waukegan. (Gates)
A noted food cereal in southern Europe.

119. PANICUM DICHOTOMIFLORUM Michx. P. proliferum. Am. auth. (8)

SPROUTING CRAB GRASS.

Common on damp cultivated soils, abundant along the railways. Often a weed in suitable locations.

120. PANICUM VIRGATUM L. (11)

SWITCH GRASS. SAND PANIC.

Very common on the sand ridges north and southeast. A large vigorous grass, of use as a sand binder.

121. PANICUM AGROSTOIDES Spreng. (13)

MUNRO GRASS.

Wet, sandy soils, southeast; not abundant. Common south and west along the Illinois and Mississippi Rivers.

122. PANICUM DEPAUPERATUM Muhl. (17)

STARVED PANIC GRASS.

Dry sandy knolls, throughout, very common. One of our abundant Panicums.

123. PANICUM PERLONGUM Nash. (18)

LONG-STALKED PANIC GRASS.

Dry sandy soil in Lake Co., Ind., rare. (Umbach) Naperville on dry hills.
Waukegan sands. (Gates)

124. PANICUM LINEARIFOLIUM Scribn. (19)

SLENDER-LEAVED PANIC GRASS.

At Miller and Dune Park, Ind., in open sandy woods. (Umbach)
Wheaton. (Moffatt) Glencoe. (Gates)

125. PANICUM DICHOTOMUM L. (27)

FORKED PANIC GRASS.

Very abundant in open dry woods, throughout; also on dry prairies. One of our most common species.

126. PANICUM BARBULATUM Michx. (28)

SMALL-SEEDED PANIC GRASS.

Dry sandy soils, Miller and Dune Park, Ind., frequent.

127. PANICUM LUCIDUM Ashe. (30)

BOG PANIC GRASS.

Low grounds, southeast in Indiana. (Umbach) Sphagnum bogs northeast of Dune Park.

128. PANICUM BOREALE Nash. (32)

NORTHERN PANIC GRASS.

Moist open swales, southeast of Miller, along the B. & O. Ry. Abundant locally. (Pepoon, Umbach)

Wet sandy soil, Gibson, Ind. Also at McCool, Porter Co., Ind. (Hill)

129. PANICUM SPRETUM Schultes. (35)

EATON'S PANIC GRASS.

Moist sandy soil in Lake Co., Ind. (Umbach)

130. PANICUM LINDHEIMERI Nash.

LINDHEIMER'S PANIC GRASS

Cook Co. (Nelson) Irondale. (Hill)

131. PANICUM HUACHUCAE Ashe. (38)

HAIRY PANIC GRASS.

Very common on dry open barrens and knolls. A generally distributed species.

132. PANICUM HUACHUCAE SILVICOLA. (Hitchc. and Chase) P. lanuginosum Scribn. and Merrill. (38½)

WOOD PANIC GRASS.

Orlando and Beach, in dry ground, 1909. (Umbach)

Palos Park, Riverside and La Grange. (Hill)

133. PANICUM IMPLICATUM Scribn. (39)

SLENDER-STEMMED PANIC GRASS.

Bogs and wet meadow margins southeast. Miller and Dune Park, occasional.

134. PANICUM MERIDIONALE Ashe. (40)

MAT PANIC GRASS.

Sandy woods, Miller and east, common. (Umbach)

Chicago, Kensington and Irondale. (Hill)

135. PANICUM SUBVILLOSUM Ashe. P. meridionale Ashe. (42)

MAT PANIC GRASS.

Dry sandy woods, near Lake Michigan, southeast.

136. PANICUM TENNESSEENSE Ashe. (43)

TENNESSEE PANIC GRASS.

Dry sand of Zion City, north of Waukegan. Rare. (Hill)

Doubtless eastward, for the plant is common in southwestern Michigan on sand flats.

137. PANICUM PRAECOCIUS Hitchc. & Chase. (46)

EARLY-BRANCHING PANIC GRASS.

Dry open knolls and barrens, southeast. Dune Park, Miller.

Waukegan moorland. (Gates)

138. PANICUM SCOPARIOIDES Ashe. (47)

STIFF, HAIRY PANIC GRASS.

Gary, 1909. (Umbach) Location probably destroyed.

Far from its normal range. The only station reported in the interior. Determined by Hitchcock and Chase.

139. PANICUM VILLOSISSIMUM Nash. (48)

WHITE-HAIRED PANIC GRASS.

Sandy barrens, southeast. Dune Park, West Pullman and intervening region. (Hill) Fairly common.

140. PANICUM TSUGETORUM Nash. (52)

HEMLOCK PANIC GRASS.

Dune Park and Miller, Ind. Not rare. (Hill)

141. PANICUM SPHAEROCARPON Ell. (55)

ROUND-FRUITED PANIC GRASS.

Sandy soils southeast. Dune Park, Miller. fairly abundant.

142. PANICUM OLIGOSANTHES Schultes. (62)

FEW-FLOWERED PANIC GRASS.

Sandy soils southeast. Very common.

143. PANICUM SCRIBNERIANUM Nash. (63)

SCRIBNER'S PANIC GRASS.

Sandy soils southeast, very common. Also north shore in suitable soils.

144. PANICUM LEIBERGII (Vasey) Scribn. (64)

LEIBERG'S PANIC GRASS.

Open lands and prairies, west of Chicago. Frequent. (Umbach)

145. PANICUM SCOPARIUM Lam. (68)

VELVETY PANIC GRASS.

Wet thickets near Sheffield, Ind. Infrequent. (Hill)

146. PANICUM CLANDESTINUM L. (71)

DEER-TONGUE GRASS. CORN GRASS.

Woods north and west; also near East Chicago. Frequent.

147. PANICUM LATIFOLIUM L. P. macrocarpon Le Conte. (73)

BROAD-LEAVED PANIC GRASS.

Woods, common; especially north and west. An abundant, fine grass.

148. PANICUM BOSCII Poir. P. Porterianum Nash. (72)

BOSC'S PANIC GRASS.

Woods, similar locations, probably not distinguished from the last species.

149. ECHINOCHLOA CRUSGALLI (L.) Beauv. Panicum L.

BARN-YARD GRASS. COCKSPUR GRASS.

Waste soils and low cultivated soils; very common. A very luxuriant grass in damp wash places, closely related to the Japanese Millet E. frumentacea.

Very variable as to awns, size of panicle and foliage. It appears that some seedsmen advertise this grass as a very valuable hay and forage plant.

150. ECHINOCHLOA WALTERI (Pursh.) Nash. Panicum crusgalli hispidum Torr.

SALT-MARSH COCKSPUR GRASS.

Ditches and swamps, near Stony Island and near Forsythe, Ind. Not common. (Hill)

In ditches at East Chicago, Calumet and adjacent places.

Miller, Ind. Common. (Umbach)

Shores of Calumet Lake. (Chase, Sherff)

151. SETARIA GLAUCA (L.) Beauv. Chaetochloa glauca (L.) Scribn.

FOXTAIL. YELLOW FOXTAIL.

Very abundant in fields and waste places.

152. SETARIA VERTICILLATA (L.) Beauv. Chaetochloa verticillata (L.) Scribn.

FOXTAIL GRASS. BRISTLE GRASS.

Along the Wabash Ry. at Miller, Ind. Frequent along the Belt Ry.

Waste places, Naperville. (Umbach)

153. SETARIA VIRIDIS (L.) Beauv.

PIGEON GRASS. FOXTAIL. GREEN FOXTAIL.

Very abundant in fields and waste places.

This plant is often called "Foxtail," looking much less like that ornamental appendage than does the panicle of S. glauca.

The book says for S. glauca, pigeon grass, but the writer never heard that term so applied, but always to this species.

154. SETARIA ITALICA (L.) Beauv. Chaetochloa italica (L.) Scribn.

HUNGARIAN GRASS. MILLET.

Roadsides and railroads, not common. The common escape is the purplish form.

155. CENCHRUS CAROLINIANUS Walt.

SANDBUR. BURGRASS. HEDGEHOG GRASS.

Abundant in all dry sandy places, throughout. A very bad weed in regions where the farm soil is very sandy. Never found in other situations.

Along the walks in Lake View, Chicago, it is a nuisance.

156. ZIZANIA PALUSTRIS L. Z. aquatica L.

WILD RICE.

Calumet River and deeper ponds, southeast, common. Particularly abundant on the Little Calumet game preserves.

Des Plaines River at Lyons. (Chase)

It seems to prefer the shallow borders of lakes, near the outlet or inlet and in favorable localities it attains a height of ten or twelve feet. The leaves vary in length from one to four feet.

In the far northwest, where it is very abundant, it is of considerable importance as a food product and is used extensively by the Indians.

157. LEERSIA VIRGINICA Willd. Homalocenchrus virginicus (Willd.) Brit.

WHITE GRASS.

Low woods, especially north and west, common.

Palos Park. (Umbach) Beverly Hills. (Bebb.)

158. LEERSIA ORYZOIDES (L.) Sw. H. oryzoides (L.) Poll.

SAW GRASS. RICE CUT-GRASS.

Common southeast, in moist swales. A very disagreeable grass to traverse.

Palos Park. (Umbach)

159. LEERSIA LENTICULARIS Michx. H. lenticularis (Michx.) Scribn.

SAW GRASS. CATCH-FLY GRASS.

Low grounds, frequent.

160. PHALARIS CANARIENSIS L.

CANARY GRASS.

Reported at Woodlawn and Garfield Park by Babcock in 1888 as rare. Ravenswood in vacant lots, very rare. Jackson Park. (Clark)

161. PHALARIS ARUNDINACEA L.

REED GRASS.

Ditches and pond margins, occasional. Most common on the Des Plaines River.

Skokie. (Sherff) Naperville. (Umbach) Beverly Hills. (Chase)

162. PHALARIS ARUNDINACEA PICTA L.

RIBBON GRASS.

About dwellings; occasional escape or permanently introduced.

163. HIEROCHLOE ODORATA (L.) Wahlenb. Savastana odorata (L.) Scribn.

VANILLA GRASS. SWEET GRASS. HOLY GRASS.

Moist meadows and prairies, abundant locally throughout. Very fragrant, especially when dried and much used by the northern Indians in basket work, the long summer leaves being gathered for this purpose.

Has an early Spring (April) and a summer period of blooming (July). The later blooming plants are much taller and seem of almost varietal value. The early form has short leaves and a panicle much exserted, with a height of from 12 to 16 inches. The summer form is two feet or more in height, with very much more open panicles.

164. ANTHOXANTHOM ODORATUM L.

SWEET VERNAL GRASS.

Streets and waste places, Bowmanville. (Gates)

165. STIPA AVENACEA L.

BLACK OAT GRASS.

Dry wooded knolls at the extreme eastern border of our district. Common in southwestern Michigan.

166. STIPA SPARTEA Trin.

PORCUPINE GRASS.

Sand ridges north and southeast, common. A common sand binder grass. West of Chicago. (Moffatt) Naperville. (Umbach)

167. ARISTIDA GRACILIS Ell.

SLENDER TRIPLE-AWNED GRASS.

Desiccated sloughs in sands, near Pine, Ind. (Hill)

168. ARISTIDA INTERMEDIA Scribn. & Ball.

PLAINS ARISTIDA.

Miller and Dune Park. (Umbach) Not common.

169. ARISTIDA OLIGANTHA Michx.

FEW-FLOWERED ARISTIDA.

Along the railways in Lyons, occasional. (Hill)
Sand dunes southeast of Miller, Ind. Rare.

170. ARISTIDA TUBERCULOSA Nutt.

TRIPLE-AWNED GRASS.

Dry sandy ridges, southeast. Common.

171. ARISTIDA PURPURASCENS Poir.

ARROW GRASS. BROOM SEDGE.

Dry soil southeast, especially in sandy locations. Rather common at Dune Park. (Hill, Chase)
Beach north of Waukegan. (Gates)

172. MUHLENBERGIA SOBOLIFERA (Muhl.) Trin.

ROCK DROP-SEED GRASS.

Wooded land near Stony Island. Reported in 1885 by Babcock.

173. MUHLENBERGIA TENUIFLORA (Willd.) B. S. P. M. Willdenovii Trin.

SLENDER SATIN GRASS.

Along the Des Plaines River, fairly common.
Stony Island. (Hill) Palos Park. (Umbach)

174. MUHLENBERGIA SYLVATICA Torr. M. umbrosa Scribn.

WOODLAND DROP-SEED.

Woods along the Des Plaines River. Babcock reports it from Maywood.
Wheaton. (Moffatt) Pine, Ind. (Umbach)

175. MUHLENBERGIA MEXICANA (L.) Trin. M. polystachya M. & B.

SATIN GRASS. WOOD GRASS.

Low prairies and open marshy lands, rather common.
Wolf Lake. (Hill)

176. MUHLENBERGIA RACEMOSA (Michx.) B. S. P. M. glomerata Trin.

WILD TIMOTHY.

Swales and pond borders, common. Very abundant in the sand region.
Des Plaines River valley, Riverside, Maywood.

177. MUHLENBERGIA SCHREBERI J. F. Gmel. M. diffusa Schreb.

NIMBLE WILL. DROP-SEED.

Very abundant in waste places, common. Our most abundant species.
Chicago Heights. (Chase) Palos Park. (Umbach)

178. BRACHYELYTRUM ERECTUM (Schreb.) Beauv.

SHORT-BEARDED GRASS

Woods northwest and southeast, common. Particularly abundant in the North Shore woods and along the Des Plaines River.
Palos Park. (Umbach)

179. HELEOCHLOA SCHOENOIDES (L.) Host.

RUSH CAT-TAIL GRASS.

47th St. and Center Ave., common, but local. (Moffatt)
Along railroad at Clarke, Ind. (Umbach)
Blue Island. (Bebb)

180. PHLEUM PRATENSE L.

TIMOTHY. HERD'S GRASS.

Roadsides and pastures, frequent. A common hay species, very variable in size.

181. ALOPECURUS GENICULATUS L.

FLOATING FOXTAIL.

Ponds of South Chicago and south, frequent. (Hill)
Englewood. (Umbach) Glen Ellyn. (Hill)

182. ALOPECURUS GENICULATUS ARISTULATUS Torr. A. aristulatus Michx.

FOXTAIL GRASS.

Ditches occasional, nowhere common. South Chicago and south. Often in shallow water.

183. SPOROBOLUS CLANDESTINUS (Spreng.) Hitchc.

ROUGH RUSH-GRASS.

Dry sandy soils. Leyden. (Gates) Dune Park, not common.

184. SPOROBOLUS ASPER (Michx.) Kunth.

ROUGH DROP-SEED GRASS.

Dry, sandy, waste ground foot of Indiana Ave. The location now built over.
Tremont, frequent in sandy soil. (Graham) Englewood, Chicago, Sept., 1898. (Umbach) Winnetka. (Johnson) Glen Ellyn. (Moffatt)

185. SPOROBOLUS VAGINIFLORUS (Torr.) Wood.

SHEATHED RUSH-GRASS.

Old fields, roads and dry banks, common.
Lyons. (Hill) Morgan Park and Eggleston. (Hill)

186. SPOROBOLUS NEGLECTUS Nash.

DROP-SEED. SMALL RUSH GRASS.

Dry roadsides, fields and barrens, occasional throughout.

Often confused with the preceding species.

187. SPOROBOLUS CRYPTANDRUS (Torr.) Gray.

SAND DROP-SEED.

Rather rare, in dry sandy ridges of the southeastern part of our area. (Hill)

Sandy soil near Northwestern University. A few specimens were found near the lake shore at Sheffield, Ind., in Aug., 1887, by Babcock.

At Sheffield the stems geniculate, sheathes bearded along the edge, root perennial. (Mill)

Reported also by Umbach, Lansing, Johnson at Chicago.

Hyde Park. (Chase) Evanston. (Sherff.)

188. SPOROBOLUS JUNCEUS (Michx.) Kunth. S. gracilis Merr.

PURPLE GRASS.

Sandy soils south of Normal Park. Reported by Hill in 1886, rare.

In the Higley and Raddin Flora of 1891 but without later confirmation except by Prof. Hill.

189. SPOROBOLUS HETEROLEPIS Gray.

NORTHERN DROP-SEED.

Rather infrequent in dry soils from the lake to the Des Plaines River. (Hill)

Along Higgins Road between Jefferson Park and the Des Plaines River.

190. AGROSTIS ALBA (L.) VAR. VULGARIS (With.) Thunb. A. alba L.

BENT GRASS. RED-TOP.

Sandy moist woods southeast. (Hill, 1892)

Roads of Du Page Co. in moist soil. (Moffatt)

Very common in low ground. A valuable hay plant.

The species and the variety are commonly not distinguished as in Britton and Brown, 2nd Ed. The nomenclature here follows Mosher, "Grasses of Illinois."

191. AGROSTIS HYEMALIS (Walt.) B. S. P. A. scabra Willd.

HAIR GRASS. TICKLE GRASS.

Low ground and marsh borders, especially southeast; abundant.

192. AGROSTIS PERENNANS (Walt.) Tuckerm.

UPLAND BENT GRASS. THIN GRASS.

Moist sandy flats near Romeo. (Umbach)

North and west infrequent; occasional southeast.

Niles woods, Maywood, River Forest. Winnetka. (Sherff)

The plant is exceedingly variable.

193. CALAMOVILFA LONGIFOLIA (Hook.) Hack. Calamagrostis longifolia Hook.

SAND-REED GRASS. SAND-BINDER GRASS. LONG-LEAVED REED GRASS.

Very common on sand dunes and ridges north and southeast. One of the most valuable of sand-binder species. Specimens at Dune Park eight to nine feet in height.

By its strong rhizomes and roots, it tends to hold together the shifting sands of the lake shore dunes.

194. CALAMAGROSTIS CANADENSIS (Michx.) Beauv.

BLUE JOINT. MARSH GRASS. "SAUGER GRASS."

One of our commonest marsh grasses, everywhere abundant, large and conspicuous. A chief source of marsh hay.

Areas of this grass are a favorite haunt of the massasauga or prairie rattlesnake.

195. CALAMAGROSTIS INEXPANSA Gray. C. confinis Man. 6th Ed.

BOG REED GRASS.

Grassy marshes, locally abundant. A very distinct species, growing in dense patches; characteristically pale in tint and thus may be easily distinguished from the other species growing near.

196. AMMOPHILA ARENARIA (L.) Link.

BEACH GRASS. SAND REED. MARRAM.

Dunes within one fourth mile of Lake Michigan; very abundant locally at Miller and Dune Park. Very fine patches near Miller, Ind. The best of the sand-binders.

Waukegan sand flats near Lake Michigan, rare.

197. CINNA ARUNDINACEA L.

WOOD REED GRASS.

Moist woods along river banks, more common than the next.

198. CINNA LATIFOLIA (Trev.) Griseb. C. pendula Trin.

WOOD REED GRASS.

Low woods, common. A fine grass.

Found on the beach of Waukegan moor. (Gates)

199. SPHENOPHOLIS OBTUSATA (Michx.) Scribn. Eatonia obtusata Lap.

EARLY BUNCH-GRASS.

Dry prairie lands west, rather common.

Woodlawn. (Lansing) Englewood. (Hill) South Chicago. (Chase)

200. SPHENOPHOLIS PALLENS (Spreng.) Scribn. Eatonia pennsylvanica Gray.

TALL EATON'S GRASS.

Open prairies, not rare throughout.

Glencoe. (Sherff)

201. KOELERIA CRISTATA (L.) Pers.

CRESTED GRASS.

Very common on sandy knolls and ridges; much more common southeast.

Abundant also on the sands north of Waukegan.

202. AVENA FATUA L.

WILD OATS.

Along the C. B. & Q. Ry. at Lisle, frequent. (Umbach) Persisting year after year.

203. AVENA SATIVA L.

OATS.

Common along railways and in vacant city lots.

204. ARRHENATHERUM ELATIUS (L.) Beauv.

TALL OAT GRASS.

Waste grounds of Jackson Park subsequent to the Columbian Exposition. Possibly exterminated.

205. DANTHONIA SPICATA (L.) Beauv.

WILD OAT GRASS.

Dry open woods, common southeast; Beverly Hills. (Hill)

Dry hills, common at Glencoe.

Common at West Chicago. (Umbach)

In Babcock's herbarium, credited to M. S. Bebb and labeled "Near Chicago." (B)

206. SPARTINA MICHAUXIANA Hitchc. S. cynosuroides (L.) Roth.

REED GRASS. SLOUGH GRASS.

Marshes, common throughout. A giant grass. Very abundant on all alluvial river bottoms.

207. BECKMANNIA ERUCAEFORMIS (L.) Host.

BECKMAN'S GRASS. SLOUGH GRASS.

Wet ground, Clyde, Ill. Frequent. (Umbach)

The only station of this interesting grass.

208. CYNODON DACTYLON (L.) Pers. Capriola dactylon (L.) Kuntze.

BERMUDA GRASS.

Barn-yards, pastures and waste places, common locally. Much cultivated southward. A chief "lawn-grass" of the Tropics.

Moffatt reports it at Wheaton.

209. BOUTELOUA CURTIPENDULA (Michx.) Torr. Atheropogon curtipendulus (Michx.) Fourn.

TALL MESQUITE GRASS. TALL GRAMA GRASS.

Dry sand knolls and ridges, abundant southeast and west near Wheaton (Moffatt)

On all dry, elevated, barren and treeless knolls.

Summit. (Umbach) Palatine. (Gates)

A fine prairie type.

210. ELEUSINE INDICA Gaertn.

YARD GRASS. CROWSFOOT.

Yards and barn-yards, rare; more abundant on west side, Chicago. (Higgins)

In many separated localities within the city. (Umbach)

211. PHRAGMITES COMMUNIS Trin. Phragmites phragmites (L.) Karst. P. vulgaris B. S. P.

REED GRASS.

Marshes; especially abundant southeast. Occasionally with creeping stems, 20 to 40 feet long, on the surface of the pond bottoms during the period of low water, which is a remarkable condition without satisfactory explanation. Sherff in paper on "Vegetation of Skokie Marsh" calls attention also to this.

Abundant in marshes of Waukegan moorland.

212. TRIPLASIS PURPUREA (Walt.) Chapm. Tricuspis. Triodia.

SAND GRASS.

Established in waste ground, 47th St. and Center Ave. Very local. (Moffatt)

213. ERAGROSTIS HYPNOIDES (Lam.) B. S. P. E. reptans Nees.

CREEPING ERAGROSTIS.

Moist, sandy soil; particularly abundant along sloughs southeast, the shores of the Chicago River and Thorn Creek. (Hill)

Skokie Marsh, near Waukegan. (Sherff)

Along Du Page River and Crystal Lake, Naperville, Des Plaines River, and Salt Creek, Palos Park. (Umbach)

214. ERAGROSTIS FRANKII (F. M. & L.) Steud.

FRANK'S ERAGROSTIS.

Dry sandy soils, roadsides, railways; common throughout the Area in suitable localities.

Grand Crossing. (Chase)

215. ERAGROSTIS PILOSA (L.) Beauv.

TUFTED ERAGROSTIS. SMALL LOVE GRASS.

Sandy or gravelly soils, common. A variable species. One form called by some botanists, E. Purshii, Schrad. (See Gray, 7th Ed.)

Riverside. (Moffatt) Ravenswood. (Gates) Hyde Park. (Chase)

216. ERAGROSTIS MEGASTACHYA (Koeler) Link. E. major Host. E. cilianensis (All) Link.

SILVER GRASS. STINK GRASS. SNAKE GRASS. LOVE GRASS.

Gardens and waste grounds common. Often used in "winter bouquets."

217. ERAGROSTIS MINOR Host. E. Eragrostis Karst.

LOW LOVE GRASS.

Sandy waste lands, infrequent. Englewood. (Hill) Of very doubtful occurrence. Probably small forms of the preceding.

Mosher, "Grasses of Illinois," examined many specimens, all proving to be the former species.

218. ERAGROSTIS CAPILLARIS (L.) Nees.

LACE-GRASS. LOVE GRASS.

Cheltenham Beach, rare, 1884. Roseland. (Brennan) South Chicago. (University of Chicago herb.) August. (B)

Dry roadsides near Wheaton. (Moffatt)

Overlooked or rare.

219. ERAGROSTIS PECTINACEA (Michx.) Steud.

PURPLE OR SHOWY ERAGROSTIS. PURPLE LOVE GRASS.

Dry sand ridges north and southeast. A showy grass. Abundant locally.

220. MELICA MUTICA Walt. M. diffusa Pursh.

MELIC GRASS.

Base of limestone ledge near Lemont. A single plant. (Hill, 1899)

Others may be found if careful search is made, or the species may be extinct here.

221. MELICA NITENS Nutt.

TALL MELIC GRASS.

Reported from Lemont by Prof. Hill. The chances are that the Lemont plants of Hill are all of this species as it is the common Illinois species.

222. DIARRHENA DIANDRA (Michx.) Wood. Korycarpus arundinaceus Zea. D. Americana Beauv. Diarina festucoides Raf.

BEAKED GRASS.

Wooded banks, common throughout. A fine woodland species.

223. DACTYLIS GLOMERATA L.

ORCHARD GRASS.

Roads, yards and fields; very common.

224. POA ANNUA L.

LOW SPEAR GRASS.

Common in lawns, along roads and in pastures.

Sometimes biennial, Hammond, Ind., May 19, 1883. (Hill)

West Pullman, Naperville and West Chicago. (Umbach)

225. POA CHAPMANIANA Scribn.

CHAPMAN'S SPEAR GRASS.

In similar locations and commonly confused with the last. Many Illinois herbaria P. annuas are P. chapmanianas. This native species is much more common than the European annua.

226. POA COMPRESSA L.

WIRE GRASS. ENGLISH BLUE GRASS. CANADA BLUE GRASS.

Common along roads and in pastures, growing in dense mats formed by the interlacing of its creeping root stocks. Difficult to destroy. A very noxious species in orchards and berry gardens, forming very thick mats of interlaced roots and rhizomes.

227. POA TRIFLORA Gilib. P. flava Am. auth.

FOWL MEADOW GRASS. FALSE RED-TOP.

Wet open soils, not common but generally distributed. Grows in dense mats with myriads of fibrous roots. Pernicious if well established. Practically indestructible unless exposed on all sides to air and sun.

Skokie Marsh, Glencoe. (Sherff) Naperville. (Umbach) Hinsdale. (Smith)

228. POA PRATENSIS L.

BLUE GRASS. JUNE GRASS.

The common grass of roadsides and pastures. The universal lawn grass of the north.

229. POA SYLVESTRIS Gray.

WOOD GRASS.

Woods, frequent; very general but overlooked. Hinsdale. (Smith)

230. POA DEBILIS Torr.

WEAK GRASS.

Rare in sandy woods southeast. (Hill)

Glencoe. (Hill) Rare. In but three Illinois stations.

231. POA BRACHYPHYLLA Schultes. P. brevifolia Muhl.

SHORT-LEAVED SPEAR GRASS.

Near Chicago. (Babcock) (Babcock's Collection, credited to M. S. Bebb.)
No reports by later collectors.

232. GLYCERIA CANADENSIS (Michx.) Trin. Panicularia canadensis (Michx.) Kuntze.

RATTLESNAKE GRASS.

Common in marshes especially southeastward. A fine showy species.

233. GLYCERIA NERVATA (Willd.) Trin. P. nervata (Willd.) Kuntze.

MEADOW GRASS. MANNA GRASS.

Bogs and marshes, common; wet prairies throughout.

234. GLYCERIA GRANDIS Wats. P. grandis (Wats.) Nash.

REED MEADOW GRASS.

Bogs, frequent; wet meadows, ditches. A showy bog species.

235. GLYCERIA PALLIDA (Torr.) Trin. P. pallida (Torr.) Kuntze.

PALE MANNA.

Button-bush and other partly wooded swamps near eastern limits of Area. Abundant in southwestern Michigan.

236. GLYCERIA BOREALIS (Nash) Batch. P. borealis Nash.

NORTHERN MANNA GRASS.

Ditches and ponds, common southeast. Probably this and G. septentrionalis Hitchc. are confused by our collectors.

237. GLYCERIA SEPTENTRIONALIS Hitchc. P. septentrionalis (Hitchc.) Bicknell.

FLOATING MANNA GRASS.

Reported from Chicago and near Wheaton by Dr. Moffatt, also at Lake Zurich, just outside our district. (Hill)

238. FESTUCA OCTOFLORA Walt. F. tenella Willd.

SLENDER FESCUE GRASS.

Very abundant on the sand ridges southeast. Delights to grow along roadsides and paths on low sandy ridges. (Hill)

Waukegan moorland. (Gates)

239. FESTUCA OVINA L.

SHEEP FESCUE.

Found in one locality east of Hammond one mile, by Prof. Hill, but evidently introduced and doubtless exterminated by inroads of improvements made in vicinity.

"The above locality is evidently an old Indian resort, as attested by chips and arrow heads of flint, teeth and bones of animals, and the shells of mollusks common northward. The species is not indigenous here. I have found it indigenous in cavities of rock on the shores of Lake Superior, as at Marquette, Mich." (Hill)

240. FESTUCA ELATIOR L. F. pratensis Huds.

MEADOW FESCUE.

Along C. & N. W. Ry. at Elmhurst. (Moffatt) Bowmanville. Mokena. (Hill)

241. FESTUCA NUTANS Spreng.

NODDING FESCUE GRASS.

Moist woods and thickets along the Des Plaines River and south and east, occasional. Stony Island, Lake Calumet, Maywood. Abundant south of Naperville.

Wheatland, Naperville. (Umbach) Hinsdale. (Smith)

242. BROMUS SECALINUS L.

CHESS OR CHEAT.

Roadsides and fields, occasional; more particularly along the railroad roadbeds. Commonly found wherever wheat is grown and ignorant farmers insist the injured wheat grains (usually from frost) turn into Chess.

243. BROMUS HORDEACEUS L. B. mollis L.

SOFT CHESS.

Railroads at Clarke and Miller, Ind. (Umbach)

244. BROMUS RACEMOSUS L.

SMOOTH CHESS.

Railways, roadsides, fields; rare.

245. BROMUS COMMUTATUS Schrad. B. racemosus L.

UPRIGHT CHESS.

Clarke, Ind., 1909 (Umbach) rare.

Britton and Brown place both these species under one name, B. racemosus.

246. BROMUS TECTORUM L.

DOWNY BROME GRASS.

Very common, in dense patches along railways, in vacant lots and on streets. Made its appearance about 1896 on the L. S. Ry. at Pine, Ind., and is rapidly becoming established along railways and in vacant lots throughout.

247. BROMUS CILIATUS L.

FRINGED BROME GRASS. WILD CHESS.

Woods, common throughout but more abundant southward.

248. BROMUS PURGANS L. B. ciliatus var. Gray.

HAIRY WILD CHESS.

Same distribution as B. ciliatus, but rare.

Wheatland, Palos Park. (Umbach) Bowmanville woods. (Gates) River Grove. (Hill)

249. BROMUS KALMII Gray.

WILD CHESS. KALM'S BROME GRASS.

Open grassy knolls southeast, common; particularly abundant along the railways.

Wheatland. (Umbach) Waukegan moorland. (Gates)

250. BROMUS INERMIS Leyss.

BROME GRASS.

Escaped from cultivation and along railroads. A common recently introduced hay grass.

251. BROMUS VILLOSUS Forsk.

VILLOUS BROME GRASS.

Reported from Cuyler by Gates in 1905. Probably exterminated. A European species and one of the worst of weeds.

252. LOLIUM PERENNE L.

RED DARNEL. RED RAY.

Occasional along roads and in waste places. Glencoe, Evanston, near Naperville.

253. SECALE CEREALE L.

RYE.

Along railways, train sown; occasional in vacant lots and near country roads. None of the cereals persist in this region.

254. TRITICUM VULGARE L.

WHEAT.

Often found along the railways, train sown. Never persistent.

255. AGROPYRON SMITHII Rydb. A. spicatum Scribn. & Sm.

WESTERN WHEAT GRASS.

Dense mats on railroad at Mokena. (Hill) Orlando, Romeo. (Umbach) Very rare, probably introduced as a fill retainer. Similar to A. repens.

256. AGROPYRON REPENS (L.) Beauv.

QUACK GRASS. COUCH GRASS. QUITCH GRASS.

Very abundant in waste places, gardens and along railroads. Several forms. Prof. Hill believes it to be native along the upper Great Lakes as at Marquette and Petoskey, Mich.

The glaucous form, not recognized as specific in the Man. 7th Ed., Gray, is the common railroad form, being sown as an earth binder on fills and embankments.

257. AGROPYRON BIFLORUM (Brignoli) R. & S.

PURPLE WHEAT GRASS.

Dry ground near Pine, Ind., identified by Prof. Hill. Rare and extra. Limital in its presence here.

"Glumes 5 to 7 nerved. A northern or mountain species, seemingly quite out of its range. In August, 1888, I found the same species at Ha Ha Bay on the Sagueney River, Canada. It is credited to the mountains of Pennsylvania, to the White Mountains and, according to Lapham, to Wisconsin and northward." (Hill)

258. AGROPYRON TENERUM Vasey.

SLENDER WHEAT GRASS.

Reported by Mrs. Agnes Chase in Chicago.

259. AGROPYRON CANINUM (L.) R. & S. Beauv.

AWNED WHEAT GRASS.

Introduced with grass seed into lawn at 711 Warren Ave., Chicago. Likely to be found in cultivated grounds. Spontaneous on prairie near Garfield Park. (B.)

260. AGROPYRON DASYSTACHYUM (Hook) Scribn.

NORTHERN WHEAT GRASS.

On C. & N. W. Ry. west of Wheaton. (Moffatt)

261. HORDEUM VULGARE L.

BARLEY.

Along railways and occasional in vacant places.

262. HORDEUM JUBATUM L.

SQUIRREL-TAIL GRASS.

Moist prairies, very common and rapidly extending its distribution, becoming a meadow weed. Very injurious in hay, the long awns forming "hair-balls" in the stomachs of live stock, often causing death.

263. HORDEUM PUSILLUM Nutt.

LITTLE BARLEY.

Along railroads at Calumet Heights, now Gary, 1906. (Umbach)
Englewood. (Derr.)

264. HORDEUM NODOSUM L.

MEADOW BARLEY.

Along railways and streets, rare.

265. ELYMUS ARENARIUS L.

DOWNY LYME GRASS.

Reported from Wilmette in 1916 by Killip.

266. ELYMUS VIRGINICUS L.

WILD RYE. LYME GRASS.

Low grounds, common. Particularly along the Des Plaines River.
Common along the Du Page River. North branch of Chicago River.

267. ELYMUS CANADENSIS L.

WILD RYE.

Low ground, very common and showy. A plant of the original prairie.

268. ELYMUS CANADENSIS GLAUCIFOLIUS (Muhl.) Gray. E. canadensis L.

GLAUCOUS WILD RYE.

Equally common and in the same locations.

269. ELYMUS ROBUSTUS Scribn. & Sm. E. canadensis L.

WILD RYE.

Dry open soil, Orland. (Umbach) 1909.
Ravenswood. (Gates, 1911) Chicago. (Babcock)

270. ELYMUS BRACHYSTACHYS Scribn. & Ball.

SHORT-AWNED WILD RYE.

Moist open ground, Ravenswood. (Gates, 1906)

271. ELYMUS STRIATUS Willd.

WOOD RYE.

Wooded banks, common throughout; particularly abundant in the Dune region.

272. HYSTRIX PATULA Moench. Hystrix hystrix (L.) Millsp.

BOTTLE-BRUSH GRASS.

Open woods and wooded banks. Common throughout. Showy.

CYPERACEAE.

SEDGES.

Grass-like herbs, with solid, often triangular, stems; fibrous roots; inconspicuous greenish or brownish flowers, enclosed in bracts; no perianth or with bristles; stamens three; ovary one, one-seeded, forming an achene; style 2 or 3-cleft perfect; polygamous or dioecious.

3000 species with 183 in our district. A practically useless family with the exception of papyrus, chufus and a few more. Some are ornamental, as the umbrella plant and certain so-called wool grasses.

The numbers in parentheses refer to Gray's Manual species' numbers.

273. CYPERUS DIANDRUS Torr. (2)

LOW CYPERUS.

Low grounds, common but less abundant than the next species.

274. CYPERUS RIVULARIS Kunth. C. diandrus castaneus Torr. (3)

SHINING CYPERUS.

Abundant on the sandy flats of Lake Co., Ind., and North Shore. Grows in dense mats or areas, tinting the surface with its rich browns.

275. CYPERUS ARISTATUS Rottb. C. inflexus Muhl. (8)

AWNED CYPERUS.

Sandy wet places southeast, common.

276. CYPERUS SCHWEINITZII Torr. (10)

SAND CYPERUS.

Dry sand ridges and dunes. Very common both along the North Shore as far as Waukegan and on the sand hills of northwestern Indiana.

277. CYPERUS ACUMINATUS Torr. & Hook. (11)

SHORT-POINTED CYPERUS.

Low moist soil near the Des Plaines River, Romeo and south. (Hill)

278. CYPERUS ESCULENTUS L. (18)

NUT GRASS. CHUFAS.

Low cultivated fields near the Des Plaines River, Thatcher's Park, Lyons and Calumet valley at Blue Island. (Hill)

279. CYPERUS ERYTHRORHIZOS Muhl. C. Halei Brit. in part. (19)

RED-ROOTED SEDGE.

Low grounds and cultivated fields, frequent.

280. CYPERUS FERAX Rich. C. speciosis Vahl. (20)

COARSE CYPERUS.

Low sandy grounds from Hyde Park south and east, infrequent.

281. CYPERUS ENGELMANNI Steud. (21)

ENGELMANN'S CYPERUS.

Moist ground near Pine, Ind. (Hill)

282. CYPERUS STRIGOSUS L. (22)

ROUGH CYPERUS.

Low ground, common. The most abundant, generally distributed species. Very variable as to size and ray features.

283. CYPERUS OVULARIS (Michx.) Torr. (28)

GLOBOSE CYPERUS.

Sandy soils, Sag. (Umbach)
East Chicago. (Hill)

284. CYPERUS HOUGHTONII Torr. (33)

HOUGHTON'S CYPERUS.

Common in the dune region and on sand hills. Dune Park. "Evidently confounded with C. Schweinitzii, but is a lower plant with more condensed heads." (Mrs. A. Chase) A careful study is needed to show whether C. Schweinitzii is as common as supposed.

285. CYPERUS FILICULMIS Vahl. (34)

SLENDER CYPERUS.

Very common on dry sandy knolls, throughout both north and southeast.

286. CYPERUS FILICULMIS MACILENTUS Fernald. (34)

SLENDER CYPERUS.

Sandy soil, Beach, 1912. Dune Park. (Umbach, 1909) Common.

287. KYLLINGA PUMILA Michx.

LOW KYLLINGA.

Sandy soil southeast, common. Abundant at Miller and Dune Park. (Umbach, Pepoon)

288. DULICHIUM ARUNDINACEUM (L.) Brit. D. spathaceum Pers.

DULICHIUM.

Common in the sandy swales southeast. Occasional in the swales north near Waukegan and in permanent marshes toward the Des Plaines River.

SPIKE RUSHES.

All plants of the Genus Eleocharis are called "Spike Rushes."

289. ELEOCHARIS QUADRANGULATA (Michx.) R. & S. E. mutata (L.) R. & S.

Wolf Lake near 121st St., abundant. (Hill)

290. ELEOCHARIS INTERSTINCTA (Vahl.) R. & S.

Shoal waters of large ponds from Goose Lake eastward, becoming frequent in southwestern Michigan.

291. ELEOCHARIS ROBBINSII Oakes.

Common on wet sands or in shoal waters at Dune Park. (Mrs. A. Chase, Prof. Hill, Prof. Umbach)

292. ELEOCHARIS OLIVACEA Torr.

Wet sands from Berry Lake to Dune Park, rather abundant. (Hill)

293. ELEOCHARIS CAPITATA (L.) R. Br.

Well distributed from Wolf Lake to Casella, Ind., east and south. (Hill)

It is an annual plant in our district, without rhizomes to perpetuate it. Having observed it for several years I find that the seeds germinate in the latter part of June, in the mud or water.

On looking for the plant the first of July the stems were about one half inch high, thickly covering the ground in spots. On examining the plants about the middle of October I found all were dead, root and stem, although dried stalks were plentiful. (Hill)

294. ELEOCHARIS CAPITATA DISPAR (E. J. Hill) Fernald. E. dispar E. J. Hill.

Wet sands near Whiting, Ind. (Hill) Dune Park. (Umbach)

Found in a single locality in a slough north of Whiting, Ind., August 29th, 1881, and described in Botanical Gazette, 7, 3 (1882), as E. dispar.

295. ELEOCHARIS OBTUSA (Willd.) Schultes. E. ovata Man. 6th Ed.

Muddy ditches and pond borders. Throughout the area.

296. ELEOCHARIS ENGELMANNI Steud.

Wet sand, Willow Creek, Porter Co., Ind. (Hill)

297. ELEOCHARIS PALUSTRIS (L.) R. & S.

Very common in shoal water or wet places. Variable as to size and form.

298. ELEOCHARIS PALUSTRIS GLAUCESCENS (Willd.) Gray.

With the species and equally abundant.

299. ELEOCHARIS ACICULARIS (L.) R. & S.

Muddy shores, very common, forming dense green mats on firm mud shores.

300. ELEOCHARIS MELANOCARPA Torr.

Wet sands, Lake Co., Ind. Reported by Prof. Hill as frequent at Dune Park. The Indiana forms are often proliferous at tip. (Umbach, Pepoon)

301. ELEOCHARIS TENUIS (Willd.) Schultes.

Wet prairies, slough borders and similar locations throughout, common.

302. ELEOCHARIS ACUMINATA (Muhl.) Nees. E. compressa Sulliv.

Wet prairies and swales south and east, common.

303. ELEOCHARIS INTERMEDIA (Muhl.) Schultes.

Low wet places, common.

304. PSILOCARYA SCIRPOIDES Torr.

LONG-BEAKED BALD RUSH.

Wet sandy shores, Lake Co., Ind. Dune Park. (Hill.) "Growing with the next species. Both are commonly attacked by a species of Uredo so that the heads are blasted. Rynchospora cymosa and Scleria verticillata were similarly affected."

305. PSILOCARYA NITENS (Vahl.) Wood.

SHORT-BEAKED BALD RUSH.

Wet sandy shores, Lake Co., Ind. Dune Park. (Hill.) See above.

306. STENOPHYLLUS CAPILLARIS (L.) Brit. Fimbristylis Gray.

HAIR SEDGE.

Dry sandy fields southeast, very common.

307. FIMBRISTYLIS CASTANEA (Michx.) Vahl. F. spadicea var. Gray.

CHESTNUT SEDGE.

Low grassy places along streams near Clarke, frequent. Waukegan flats. Dune Park, very abundant and fine.

308. FIMBRISTYLIS LAXA Vahl. F. Baldwiniana Torr.

WEAK FIMBRISTYLIS.

Hyde Park, common. (Babcock)
We have seen only doubtful specimens of this species from our area.
True F. laxa is a tropical American species.

309. FIMBRISTYLIS AUTUMNALIS (L.) R. & S.

AUTUMN SEDGE.

Low grounds southeast, very abundant.
At Tolleston and Whiting, Ind., it is local but abundant. Specimens found near Whiting have the nut covered with stipitate tubercles, or wart-like projections. These are mentioned by Torrey in his "Cyperaceae" under Trycholostylis mucronulatus and in Chapman's Flora. (Hill)

CLUB AND BULRUSHES.

The Genus Scirpus includes the Club Rushes and two Bulrushes. Without special names in most instances.

310. SCIRPUS PAUCIFLORUS Lightf. Eleocharis Link.

Wet sands south of Whiting, Ind. (Hill) Throughout the Dune region.

311. SCIRPUS SUBTERMINALIS Torr.

Ponds and sluggish streams from Whiting, Ind., eastward. Frequent or common, often overlooked.

312. SCIRPUS DEBILIS Pursh.

Low muddy places southeast, frequent. In some local stations very abundant.
At Miller, Ind., Prof. Hill has found plants with the bristles usually five in number.

313. SCIRPUS SMITHII Gray.

Growing with S. debilis at Whiting, Ind. Well marked. (Hill, '92, '97)
Dune Park, fairly abundant. (Umbach) Very common farther east in Michigan.

314. SCIRPUS AMERICANUS Pers. S. pungens Vahl.

LAKE SHORE RUSH.

Sandy shoals and pond borders. Very common. Horses are fond of this.

315. SCIRPUS TORREYI Olney.

Wet sands northeast of Dune Park, not common. Readily spreading by the red, fragile rootstocks. (Hill)

316. SCIRPUS VALIDUS Vahl. S. lacustris Am. auth.

COMMON BULRUSH.

Ponds and slow streams, very common.
Used by the Indians in basket weaving.

317. SCIRPUS OCCIDENTALIS (Wats.) Chase.

LAKE BULRUSH.

Slough borders, Dune Park. (Umbach)

318. SCIRPUS FLUVIATILIS (Torr.) Gray.

RIVER RUSH.

Low ground, frequent. One of our largest species. Stems often ¾ inch in diameter.

319. SCIRPUS ATROVIRENS Muhl.

DARK GREEN RUSH.

Low meadows, marshes and bogs, very abundant.

320. SCIRPUS GEORGIANUS Harper.

Wet sandy soil, Clarke, Ind., 1909. (Umbach)

321. SCIRPUS LINEATUS Michx. Eriophorum B. & H.

RED BULRUSH.

Marshes, very abundant.

322. SCIRPUS POLYPHYLLUS Vahl.

SMALL HEADED BULRUSH.

Marshes eastward from Mineral Springs, occasional.

323. SCIRPUS CYPERINUS (L.) Kunth. Eriophorum L.

WOOL GRASS.

Marshes, abundant, covering large areas and giving a characteristic color when the reddish bristles are fully formed in the Fall.

324. SCIRPUS CYPERINUS PELIUS Fernald.

Sloughs and swamps. Dune Park and eastward. (Hill)

325. SCIRPUS CYPERINUS CONDENSATUS Fernald.

Local at Dune Park and east. (Hill)

326. SCIRPUS ATROCINCTUS Fernald.

Sloughs at Dune Park. (Hill)

327. ERIOPHORUM GRACILE Roth.

SLENDER WOOL GRASS.

Bogs southeast, rare. Tolleston. (H. S. P.) Pine and Miller.

328. ERIOPHORUM VIRIDI-CARINATUM (Engelm.) Fernald. E. polystachion Am. auth.

WOOL GRASS. COTTON GRASS.

Very abundant in swamps and bogs, throughout.
A striking plant when fully developed.

329. ERIOPHORUM VIRGINICUM L.

RUSTY WOOL GRASS. RUSTY COTTON GRASS.

Swamps and sloughs south and east, common.

330. ERIOPHORUM VIRGINICUM ALBUM Gray.

Pine marsh near Westchester, Porter Co., Ind. (Hill)

331. FUIRENA SQUARROSA Michx.

UMBRELLA GRASS.

Abundant about Goose Lake. Northeast of Dune Park. (Umbach, Pepoon, Hill)

This lake in 1907 was a broad expanse of shoal water. In 1915 it was entirely a marsh.

332. HEMICARPHA MICRANTHA (Vahl.) Brit. H. subsquarrosa Nees.

HEMICARPHA.

Sandy pond borders southeast, common.

Typical specimens are found in the wet sands along the railroad from Miller to Dune Park, Ind., frequent. (Hill)

333. HEMICARPHA DRUMMONDII Nees. H. micrantha (Vahl.) Brit.

Dune Park and Miller with, and mistaken for, the preceding. (Umbach)

334. RYNCHOSPORA CORNICULATA (Lam.) Gray.

HORNED RUSH.

Marsh borders northeast of Dune Park, and eastward. (Umbach, Pepoon)
A very conspicuous sedge when fully developed.

335. RYNCHOSPORA MACROSTACHYA Torr.

HORNED RUSH.

Abundant locally northeast of Dune Park, growing in dense patches. (Hill, Umbach) More common than the preceding.

336. RYNCHOSPORA CYMOSA Ell.

GRASS BEAK RUSH.

Abundant northeast of Dune Park. (Umbach) Miller, Ind. (Hill)

337. RYNCHOSPORA ALBA (L.) Vahl.

WHITE BEAK RUSH.

Abundant in low ground southeast, Dune Park and northeast. Also at Beach near Waukegan.

338. RYNCHOSPORA CAPILLACEA Torr. Var. leviseta E. J. Hill. Am. Nat., Vol. 10. June, 1876, p. 370.

HAIR BEAK RUSH.

Bogs near Dune Park. (Hill, Umbach) All the specimens examined by Prof. Hill are the variety form. Very abundant.

Frequent in wet sands at Pine Station, Edgemoor and at Whiting, Ind. First discovered at Pine Station in 1875 and frequently found since then. Bristles perfectly smooth but not otherwise differing from the type. All the specimens in our district, so far examined, are of the variety, not the type.

Also found at Torch Lake, Mich., with the type. (Hill) (B. P.)

339. RYNCHOSPORA GLOMERATA (L.) Vahl.

CLUSTERED BEAK RUSH.

Abundant in all low sandy ground north and northeast.

Our common Beaked Rush.

340. RYNCHOSPORA GLOMERATA DISCUTIENS Clarke.

Dune Park, Ind. (Umbach)

341. RYNCHOSPORA GLOMERATA PANICULATA (Gray) Chapm.

Dune Park, 1912. (Umbach)

342. CLADIUM MARISCOIDES (Muhl.) Torr. Mariscus mariscoides (Muhl.) Kuntze.

TWIG RUSH. BOG RUSH.

Bogs and marshes southeast, common.

343. SCLERIA TRIGLOMERATA Michx.

NUT RUSH. WHIP RUSH.

Abundant in low sandy swales, southeast.

344. SCLERIA PAUCIFLORA Muhl.

FEW-FLOWERED NUT RUSH.

Dry sands bordering sloughs, Dune Park. (Hill) Miller. (Umbach) Very common locally.

345. SCLERIA RETICULARIS PUBESCENS Brit. S. setacea Poir.

TORREY'S NUT RUSH.

Damp sands, Dune Park and locally elsewhere in the sand regions. (Chase, Hill)

346. SCLERIA VERTICILLATA Muhl.

LOW NUT RUSH.

Marshes near Dune Park. (Umbach, Hill) Damp sands from Pine, Miller and eastward.

CAREX (Ruppius) L.

This genus is the best represented of any of the flowering plants, the conditions of soil and topography being especially favorable for the growth of these sedges. Of the 185* species of the 7th Ed. 92 are found within our limits or just fifty percent. Many of the species are further represented by varieties, bringing the total of forms up to 108 or six percent of the Flora.

The numbers in ( ) are the Gray Manual species numbers.

The plants are exceedingly difficult to determine by Botanical Keys. To all properly belong the name "Sedge." Britton gives each a qualifying adjective, but no common names are here used for the separate species.

347. CAREX MUSKINGUMENSIS Schwein. (1)
Swales southeast, frequent. Glen Ellyn. (Moffatt)
The Waukegan moorlands.

348. CAREX SCOPARIA Schkuhr. (2)
Low grounds south and east, frequent.

349. CAREX TRIBULOIDES Wahlenb. (3)
Very common in swales especially southeast and in the open wooded regions north and west.

350. CAREX SICCATA Dewey. (4)
Dry sandy open woods. Lake Co., Ind. (Hill)

351. CAREX CRISTATA Schwein. C. cristatella Brit. C. tribuloides var. Bailey. (8)
Moist open places, prairies and swales, frequent.
Abundant at Edgebrook.

352. CAREX MIRABILIS Dewey. C. normalis MacK. (10)
Dry open banks. Edgebrook. (Gates, 1906)

353. CAREX STRAMINEA Willd. C. tenera Dewey. (11)
Dry prairies and barrens throughout, very variable.

354. CAREX HORMATHODES Fernald. C. straminea aperta Boott. (12)
Bogs, not common.

355. CAREX BICKNELLII Brit. C. straminea crawei Boott. (13)
Damp meadows, West Pullman, that have been largely dried by draining. (Hill, 1898) Dune Park. (Umbach)

356. CAREX ALATA Torr. C. straminea alata Bailey. (15)
Wet sandy bogs from East Chicago eastward, particularly in thickets. Rare.

*Britton describes 242, in the Illustrated Flora, Second Edition.

357. CAREX SUBERECTA (Olney) Brit. C. tenera var. (16)
Clarke, Ind. (Umbach, 1909)

358. CAREX FESTUCACEA Schkuhr. C. straminea var. Tuckerm. (17)
Dry banks southeast, fairly common. Dune Park, Miller, Clarke, Tolleston.

359. CAREX FESTUCACEA BREVIOR (Dewey) Fernald. C. straminea brevior Dewey. (17)
Dry prairies and barren lands throughout our range. More common than the last.

360. CAREX BEBBII (Olney). C. tribuloides var. Bailey. (18)
Low ground, Clarke, Ind. (Umbach)

361. CAREX FOENEA PERPLEXA Bailey. (19)
Low ground, Warrenville. (Moffatt)

362. CAREX STELLULATA Good. C. Leersii Willd. C. echinata microstachys Boeckl. (27)
Open, low or boggy ground; frequent.

363. CAREX STELLULATA CEPHALANTHA (Bailey) Fernald.
Near Pine Station, Ind. (Higley)

364. CAREX SCIRPOIDES Schkuhr. C. interior Bailey. (29)
Tamarack bog south of Bangs Lake, Ind. (Hill) Clarke, Miller and generally widely distributed. Much of the C. stellulata of the botanical collectors is this species. (Hill)

365. CAREX SCIRPOIDES CAPILLACEA (Bailey) Fernald. C. interior capillacea Bailey. (29)
Birch swamp one mile east of Dune Park, abundant. Produces large stools, partly submerged in Spring. (Hill)

366. CAREX SEORSA E. C. Howe. C. rosafoides E. C. Howe. (30)
Sparingly in a wet sandy place one mile east of Dune Park. (Hill, '03)

367. CAREX CANESCENS L. (32)
Bogs at Pine, Ind. and east; very rare. (Babcock)

368. CAREX BRUNNESCENS Poir. C. canescens alpicola. (33)
Moist grounds East Chicago and east. (Hill, Babcock)

369. CAREX BROMOIDES Schkuhr. (34)
Swamps of the Calumet region, not frequent. (Babcock) Evanston, Otis, Ind. (Hill)

370. CAREX TRISPERMA Dewey. (37)
Mossy banks in woods near Dune Park, rare. (Umbach, Pepoon)
Near Pine, Ind., in woods. (Higley)

371. CAREX TENELLA Schkuhr. C. disperma Dewey. (40)
Cold bogs and swamps, common.

372. CAREX ROSEA Schkuhr. (41)
Open dry woodland, common.

373. CAREX ROSEA RADIATA Dewey. (41)
With the species, common.

374. CAREX ROSEA MINOR Boott. (41)
Fully as common as the species. (Babcock)

1908* CAREX RETROFLEXA Muhl. C. rosea var. Torr. (42)
With the last, abundant.

375. CAREX MUHLENBERGII Schkuhr. (44)
Open dry soils, very common.
Our most abundant species.

376. CAREX CEPHALOPHORA Muhl. (45)
Dry open knolls, frequent.

377. CAREX SPARGANIOIDES Muhl. (47)
Woods and thickets, common.

378. CAREX CEPHALOIDEA Dewey. (48)
Woods, frequent.

379. CAREX ALOPECOIDEA Tuckerm. (49)
Wet grounds and wet open woods. Wheeler, Ind. (Hill) Miller, Ind.

380. CAREX GRAVIDA Bailey. (50)
Open woodlands west. (Moffatt) Along the N. W. Ry. at Wheaton, forming large clumps. Also at Lake George, Ind. and East Chicago. (Identified by Prof. L. H. Bailey)

381. CAREX VULPINOIDEA Michx. (51)
FOX SEDGE.
Swales, very abundant. A striking species occurring in large clumps.

382. CAREX SETACEA AMBIGUA (Barrett) Fernald. C. annectans Bicknell. (52)
Lemont, 1898. (Hill) Abundant in damp meadows, Glenwood. (Hill)

*Serial number and citation were omitted.

383. CAREX DECOMPOSITA Muhl. (53)

Swampy ground west of Dunning. (Gates)
Low marshy places. An abundant species.

384. CAREX DIANDRA Schrank. C. teretiuscula Good. (54)

Wet places and sloughs throughout, frequent.
Inconspicuous, growing among the luxuriant marsh grasses.

385. CAREX CONJUNCTA Boott. (55)

Bogs, marshes and swales; common.

386. CAREX STIPATA Muhl. (56)

Swales; one of the most common carices.

387. CAREX CRUS-CORVI Shuttlw. (57)

CROW-BEAK SEDGE.

In marshes near the Des Plaines, rare. Sloughs, southeast. Pine, Ind. Glen Ellyn. (Moffatt)
Our largest species with great fruiting heads.

388. CAREX SARTWELLII Dewey. (59)

Slough borders near Miller, Ind., rare. (Babcock) Moist swales throughout Du Page Co. (Moffatt)
Tamarack bog south of Bangs Lake, Ind. (Hill)

389. CAREX CHORDORRHIZA L. f. (61)

Tamarack bog south of Bangs Lake, Ind. (Hill)

390. CAREX CRINITA Lam. (65)

Low grounds, occasional. Assumes a number of varietal forms.

391. CAREX AQUATILIS Wahlenb. (66)

Marshes, common locally. Rarely distributed throughout. Variable.

392. CAREX STRICTA Lam. (71)

PRAIRIE SEDGE.

Wet prairies and swales. Common in western portion of Area. Very variable, passing into a number of marked forms.

393. CAREX STRICTA ANGUSTATA (Boott.) Bailey. (71)

With the species, but not as common.

394. CAREX STRICTA DECORA Bailey. C. Haydeni, Dewey. (71)

Woods at Riverside, abundant. (Babcock) Evanston. (Johnson)

395. CAREX AUREA Nutt. (72)

GOLD SEDGE.

Moist banks southeast, common.
A dainty little species, markedly different.

396. CAREX PAUCIFLORA Lightf. (74)

Bogs southeast, common.

397. CAREX LEPTALEA Wahlenb. C. polytrichoides Muhl. (75)

Bogs and moist banks southeast, common.

398. CAREX POLYGAMA Schkuhr. C. Buxbaumii Wahlenb. C. fusca Man. 6th Ed. (80)

Dune Park, Clarke, Miller, in bogs and marshes. An abundant plant.

399. CAREX TRICEPS HIRSUTA (Willd.) Bailey. C. triceps in part. (81)

Dry woods and thickets, abundant westward.

Des Plaines and Downers Grove. Naperville and south on the east fork of the Du Page River.

400. CAREX VIRESCENS Muhl. C. costellata Brit. (82)

Dry thickets, especially westward. Frequent southeast.

Woods, in gravelly soil, near Sharpshooters Park at Gano; common and local. (Hill, Babcock)

401. CAREX DAVISII Schwein. (84)

Moist woods, Bowmanville.

Des Plaines River bottoms. (Case)

Woods of the north branch at Edgebrook, common.

402. CAREX GRACILLIMA Schwein. (85)

GRACEFUL SEDGE.

Moist woodlands, Bowmanville. Pine, Ind., and Miller. Common at Edgebrook.

403. CAREX SHORTIANA Dewey. (88)

Low ground of the north shore region, rare. Near the "heads" of ravines running to the lake.

A markedly peculiar species with its combined flowers in spikes.

404. CAREX JAMESII Schwein. (91)

GRASS SEDGE.

Dry woods west, Naperville. (Umbach) New Lenox in dry woods. (Hill) Forest Glen and Glen Ellyn. (Moffatt) Common at Naperville. Common in woods at Lisle.

405. CAREX UMBELLATA Schkuhr. C. deflexa media Bailey. (93)

Dry sandy banks, Pine and eastwards, almost always associated with the Jack Pines.

406. CAREX COMMUNIS Bailey. C. pedicellata Brit. (97)

Dry open woods throughout; very common southeast.



PEPOON

EARLY SEDGE (*Carex pennsylvanica*)
ONE OF THE FIRST OF OUR WOODLAND FLOWERS

407. CAREX VARIA Muhl. (98)
Dry sandy woods from Pine to Dune Park, frequent.

408. CAREX PENNSYLVANICA Lam. (100)
EARLY SEDGE.
Dry woods everywhere, common. Our earliest blooming Carex. Pretty when in full bloom with its staminate blossoms conspicuous.

409. CAREX PUBESCENS Muhl. (101)
HAIRY SEDGE.
Woods and thickets, common.

410. CAREX LIVIDA (Wahlenb.) Willd. (104)
Swales and wet places. Pine and eastward. Rare.

411a. CAREX TETANICA Schkuhr. (106)
Common on meadows and on the moist west prairies. Also on the Waukegan moorlands.

411b. CAREX TETANICA MEADII (Dewey) Bailey. C. meadii Dewey. (106)
Wet prairies throughout, frequent.

412. CAREX VAGINATA Tausch. C. altocaulis Brit. (Ed. I) (108)
Sloughs between Pine and Clarke, Ind. Rare.

413. CAREX PALLESCENS L. (110)
Glades near Berry Lake, Ind. (Hill)

414. CAREX PAUPERCULA IRREGUA (Wahlenb.) Fernald. C. magellanica Man. Ed. 6. (111)
Sloughs near Pine, Ind. (Hill)

415. CAREX LIMOSA L. (112)
Swamps north of Clarke, Ind. (Moffatt)

416. CAREX EBURNEA Boott. C. setifolia Brit. (117)
Dry sandy soils, Pine, Ind. Common but limited in range. (Hill)
Clarke, Ind. Moist ravine slopes of Lake Bluff.

417. CAREX RICHARDSONI R. Br. (120)
Dry sandy open woods. Pine, Ind. Commonly overlooked. (Lawson)

418. CAREX PLANTAGINEA Lam. (121)
PLANTAIN SEDGE.
Wooded banks and rich open woods. Niles, Riverside, Glencoe, Evanston and also southward. Infrequent. (Babcock)

419. CAREX CAREYANA Torr. (122)
Shaded ravines of the north shore, very rare. (Babcock)
Ravines beyond Otis, Ind., at eastern limit of our area. (Hill)

420. CAREX LAXIFLORA Lam. (127)
WOOD SEDGE.
Woods, very common and exceedingly variable.

421. CAREX LAXIFLORA PATULIFOLIA (Dewey) Carey. (127)
Southeast, very rare. (Babcock)

422. CAREX LAXIFLORA BLANDA (Dewey) Boott. Var. striatula Carey. (127)
The more common form in woods everywhere. Particularly abundant north and west in the Edgebrook and Des Plaines River regions.

423. CAREX LAXIFLORA LATIFOLIA Boott. C. albursina Sheld. (127)
Wooded banks, abundant. Particularly in the Des Plaines woods.

424. CAREX DIGITALIS Willd. (125)
Dry open places in the wooded ridges of the southeast.

425. CAREX HITCHCOCKIANA Dewey. (128)
Woods near Miller, Ind. (Higley)

426. CAREX OLIGOCARPA Schkuhr. (129)

Dry open woods, frequent. Bailey and Hill remark on the tendency to confound this species with forms of laxiflora and grisea.

427. CAREX CONOIDEA Schkuhr. (131)

Moist prairies. More abundant west, infrequent southeast.

428. CAREX GRISEA Wahlenb. (132)

GRAY SEDGE.

Woods, frequent. Rather common along the north branch of the Chicago River and along the Des Plaines River.

429. CAREX GRANULARIS Muhl. (135)

Meadows and swales, very common; particularly southeast.
Abundant on the moors of Waukegan in the damp sands.

430. CAREX CRAWEI Dewey. (136)

Moist sandy flats, Pine and eastward. Local. Abundant where found.

431. CAREX FLAVA L. (138)

YELLOW SEDGE.

Swales at Pine and Tolleston. (Umbach)

432. CAREX FLAVA RECTIROSTRA Gaudin. (138)

Sandy swales, Beach and Pine. (Umbach)

433. CAREX OEDERI PUMILA (Cosson & Germain) Fernald. C. flava viridula Bailey. (139)

Moist sandy places. Rather common from South Chicago to Pine, Ind. Also near Englewood. (Hill) Abundant in railway excavations, when not too wet.

434. CAREX LONGIROSTRIS Torr. (141)

LONG-BEAKED SEDGE.

Wooded banks of Des Plaines and west, local. Very abundant in rich woods near junction of forks of Du Page River, south of Naperville.

435. CAREX DEBILIS RUDGEI Bailey. (146)

Open thickets near Porter, Ind. 1912. (Umbach)

436. CAREX DEBILIS STRICTIOR Bailey. (146)

Prof. Umbach collected plants near Porter that answered the description, although far from the Manual locality.

437. CAREX SCABRATA Schwein. (150)

ROUGH SEDGE.

Wet slough margins from South Chicago eastward, rare. (Babcock) Evanston and Niles woods.

438. CAREX FILIFORMIS L. (151)

Moist swales abundant throughout.

439. CAREX LANUGINOSA Michx. C. filiformis latifolia Boeckl. (152)

WOOLLY SEDGE.

With the last, common. Usually the more abundant species.

440. CAREX OLIGOSPERMA Michx. (156)

Peat bogs and marshes south of Miller, Ind. (Hill) Miller, Dune Park, Tolleston. (Umbach)

441. CAREX TRICHOCARPA Muhl. (158)

Marshes; common especially southeast.
Chicago Heights.

442. CAREX RIPARIA W. Curtis. (159)

Swamps southeast, occasional. Miller, Ind., Clarke, Ind. (Hill)

443. CAREX SQUARROSA L. (160)

Very local, wet places near north branch of Chicago River at Bowmanville. (Pepoon, Gates) Porter, Ind. (Umbach) Edgebrook.

444. CAREX COMOSA Boott. C. Pseudo-Cyperus americana Hochst. (165)

BRISTLE SEDGE.

Marshes, very common; particularly southeast in the Calumet region.
A strikingly conspicuous sedge.

445. CAREX HYSTERICINA Muhl. (166)

BLADDER SEDGE.

Common in marshes. One of the abundant carices.

446. CAREX LURIDA Wahlenb. (167)

A most common carex in wet places everywhere throughout our range.

447. CAREX RETRORSA Schwein. (169)

Woods in low ground. Glen Ellyn, infrequent. (Moffatt)
Swamps of Glencoe and north, infrequent.

448. CAREX LUPULIFORMIS Sart. C. lupulina polystachya S. & T. (172)

HOP SEDGE.

Wet borders of ponds north and west. Not common.
Glencoe, rare. (Babcock)
Edgebrook in wet woods.

449. CAREX LUPULINA Muhl. (173)

HOP SEDGE.

Common in swamps, especially southward.

450. CAREX LUPULINA PEDUNCULATA Dewey. (173)

With C. lupulina and often abundant locally.

451. CAREX GRAYII Carey. C. Asa-Grayii Bailey. (174)

BUR SEDGE.

Wet woods of Bowmanville and along the Des Plaines River, common. Also in Lake Co., Ind. Woods of Edgebrook, common.

452. CAREX INTUMESCENS Rudge. (175)

SWOLLEN SEDGE.

Wet woods of Bowmanville and Des Plaines River; southeast frequent locally.

453. CAREX FOLLICULATA L. (176)

Wet woods of Bowmanville, frequent.
Station is now destroyed. (1926)

454. CAREX ROSTRATA UTRICULATA (Boott.) Bailey. C. utriculata Boott. (183)

Common in marshes, particularly south and east.
Abundant also in prairie marshes west and northwest.

455. CAREX TUCKERMANI Dewey.

Swamps of Chesterton. (Hill)

ORDER 4—PALMALES

THE PALMS.

No representative in our area. None of the species hardy enough to withstand much frost.

ORDER 5—SYNANTHAE

No representatives with us.

ORDER 6—ARALES

THE AROIDS.

Two Families. The Arums and the Duck's-meat.

ARACEAE.

ARUM FAMILY.

Herbs, with spathaceous flowers borne on a spadix. Flowers small, generally monoecious occasionally perfect or dioecious. Plant with corm or rootstock, commonly acrid or aromatic.

900 species, mostly tropical, with 5 in our district.



JACK–IN–THE–PULPIT (*Arisaema triphyllum*)

456. ARISAEMA TRIPHYLLUM (L.) Schott.

JACK-IN-THE-PULPIT. INDIAN TURNIP.

Common in moist and rich woodlands. Two distinct forms as to the color of the spathe, greenish or purplish-red. The former being usually the staminate and the latter the pistillate forms, but not invariably so.

The species is nearly always dioecious and those plants staminate or mostly so are much more persistent. The solid bulbs or corms are intensely fiery-acrid and a common source for painful practical jokes among country children.

457. ARISAEMA DRACONTIUM (L.) Schott.

GREEN DRAGON.

Abundant in moist woodlands along the Chicago and Des Plaines rivers also north in the ravines from Glencoe northward. Common in the New Lenox forests. Very common in the Chicago Heights Forest Preserve.

458. PELTANDRA VIRGINICA (L.) Kunth. P. undulata Raf.

ARROW ARUM. WATER ARUM.

Borders of ponds and lakes from East Chicago eastward, common. Not observed in the regions north, west and southwest of Chicago.



PEPOON

AN APRIL WOODLAND—SKUNK CABBAGES AND GREAT-FLOWERED TRILLIUMS

459. SYMPLOCARPUS FOETIDUS (L.) Nutt. Spathyema foetida (L.) Raf.

SKUNK CABBAGE. SWAMP CABBAGE.

Low boggy wooded swamps, everywhere. Very abundant in the thicket marshes of the southeast dune region. The peculiar fruits do not seem to be generally known.

Our earliest flower, the buds form the previous fall and bloom by March 15th, as a rule, whatever the spring weather may be.

460. ACORUS CALAMUS L.

SWEET FLAG. CALAMUS.

Muddy borders of ponds, streams, occurring in isolated patches, frequent throughout.

Doubtless often Indian planted.

Foliage very fragrant in late Fall. Used in medicine.

LEMNACEAE.

DUCKWEED. DUCK'S-MEAT.

Very small floating plants, the foliage reduced to frond-like expansions of various shapes. Flowers very small, monoecious, rarely seen.

Thirty species, widely distributed, with five in our district.

461. SPIRODELA POLYRHIZA (L.) Schleid.

RED DUCK'S-MEAT. GREAT DUCK'S-MEAT.

Ponds and stagnant waters generally, very common. The most abundant species.

The fronds are often red on the under side.

A favorite hiding place for the fresh water polyp, the green Hydra.

462. LEMNA TRISULCA L.

FORKED DUCK'S-MEAT. 3-PARTED DUCK'S-MEAT.

Ponds and slow stagnant streams, common.

Grows very well in school aquaria.

463. LEMNA PERPUSILLA Torr.

LEAST DUCK'S-MEAT.

Calumet region, very rare. (Babcock)

464. LEMNA MINOR L.

SMALL DUCK'S-MEAT.

Seepage pools and small ponds. Clarke, Ind., not common. Rare in other suitable localities.

The Higley and Raddin Edition says "in stagnant water, common."

In the pools of the Waukegan moorland, occasional.

465. WOLFFIA COLUMBIANA Karst.

WOLFFIA.

Ponds, originally very abundant along the road between Clarke and Pine, Ind. Rare or overlooked. There may be some seasonal condition about this species, as it seems to largely disappear for long periods.

Doubtless well distributed but overlooked. Commonly associated with Lemnas.

Very abundant at Miller in 1914. (Umbach) "¾ inch long" in old list a manifest error.

ORDER 7—XYRIDALES

THE YELLOW-EYED GRASS ALLIES.

Six Families, the Mayaca, Yellow-eyed Grass, Pipe-wort, Bromelia, Day-flower, and Pickerel-weed. All are represented with us except the first and fourth.

ERIOCAULACEAE.

PIPE-WORT FAMILY.

Aquatics with narrow tufted leaves and naked scapes, producing dense heads of small flowers having chaffy perianths.

340 species, mostly tropical, with 1 in our area.

466. ERIOCAULON ARTICULATUM (Huds.) Morong. E. septangulare With.

PIPE-WORT.

Pond borders from East Chicago eastward. Abundant at Goose Lake near Dune Park.

Very variable as to size.

XYRIDACEAE.

YELLOW-EYED "GRASS" FAMILY.

Aquatics, with rush-like leaves and scapose yellow flowers in heads. Perianth 3-parted.

60 species, mostly tropical, with 1 or 2 in our area.

467. XYRIS CAROLINIANA Walt.

YELLOW-EYED GRASS.

Pond borders, southeast, frequent.

Pine, Miller, Dune Park. Common about Goose Lake.

468. XYRIS FLEXUOSA Muhl.

YELLOW-EYED GRASS.

Wet sandy places through the dune region. Commonly confused with X. caroliniana.

COMMELINACEAE.

SPIDERWORTS. DAY-FLOWERS.

Herbs with jointed stems, parallel veined sheathing leaves, and 3-parted perianth of dissimilar parts. Flowers very ephemeral.

350 species, mostly tropical, with 4 in our district.

469. TRADESCANTIA BREVICAULIS Raf. T. virginica L., var. villosa Wats.

SHORT-STEMMED SPIDERWORT.

In woods near Washington Heights, June, 1891. (Bastin, Babcock)

Does not seem to be reported again. The author has never found this plant.

470. TRADESCANTIA REFLEXA Raf.

SPIDERWORT. SNAKEWEED.

Rich and moist soils, common. Has generally been confused with T. virginiana.

471. TRADESCANTIA VIRGINIANA L.

SPIDERWORT.

Mostly alluvial soils, but found in many varying situations, probably introduced here. Abundant along all railroads, growing on the sand ballast.

A frequent variation is a form with rose colored flowers and a rarer one with white flowers.

472. COMMELINA COMMUNIS L.

DAY-FLOWER. WILD WANDERING JEW.

Very abundant in flower gardens as a noxious weed. One of the most pernicious of city weeds, growing, by preference, in shaded places.

473. COMMELINA VIRGINICA L.

DAY-FLOWER.

Sandy soils from Clarke east to Dune. A common plant of the Dunes of the Mississippi River in Northwestern Illinois. "Moist" soil seems a serious error as stated in manuals and repeated in Gray, Ed. 7. With us it appears to advantage in dry situations.

PONTEDERIACEAE.

PICKEREL-WEEDS.

Aquatics with spathaceous irregular flowers with a 6-parted perianth.

25 species, mostly tropical, with 3 in our district, more correctly 2 species and a variety.

474. PONTEDERIA CORDATA L.

PICKEREL-WEED

Shoal ponds and sluggish streams, common, forming shoal-water "zones" or "patches."

475. PONTEDERIA CORDATA ANGUSTIFOLIA Torr.

NARROW-LEAVED PICKEREL-WEED.

Miller and Clarke, Ind., frequent.

476. HETERANTHERA DUBIA (Jacq.) MacM. H. graminea Vahl.

MUD PLANTAIN. WATER STAR-GRASS.

Muddy shores of the Des Plaines River, and common along the Illinois River.
Calumet River. (Hill)
Naperville, common on the Du Page River. (Umbach)

ORDER 8—LILIALES

THE LILY-LIKE PLANTS.

Nine Families, the Rush, Bunch Flower, Lily, Lily of the Valley, Smilax (these four latter often combined, as in this catalogue, in the Lily), Blood-root, Amaryllis, Yam, and Iris.

JUNCACEAE.

THE TRUE RUSHES.

Grass-like or rush-like plants, mostly of moist soils. Perianth glumaceous, 3-parted with petals and sepals similar. Inflorescence usually compound.

200 species, of wide distribution, with 19 in our district.

Very difficult of determination except in fruit. With Carex, common "bug-bears" of the average amateur who rarely attempts to name them.

477. JUNCUS BUFONIUS L.

TOAD RUSH.

Sandy shores, southeast, common. Probably elsewhere in suitable locations.

478. JUNCUS TENUIS Willd.

ROAD-SIDE RUSH.

Common along roadways and paths. Always to be found in soils that are packed by travel.

479. JUNCUS DUDLEYI Wiegand.

DUDLEY'S RUSH.

Easily overlooked or mistaken for J. tenuis. Common at Lemont in wet pasture, south of the Little Calumet at Gary, Ind. Probably generally distributed. (Hill)

Found at Beach. (Umbach)

480. JUNCUS DICHOTOMUS Ell.

FORKED RUSH.

Wet sandy shores and flats, Miller, Dune Park, and generally in the dune region.

481. JUNCUS SETACEUS Rostk.

BRISTLE RUSH.

Sandy moist ballast on B. & O. near Whiting, Ind. (Higley) Doubtless introduced.

482. JUNCUS GREENEI Oakes & Tuckerm.

GREEN'S RUSH.

Wet sands from Whiting to Miller, rare.
Dune Park. (Umbach)

483. JUNCUS BALTICUS LITTORALIS Engelm. J. balticus Willd.

LAKE SHORE RUSH.

Lake shores in sand, common; also for some distance inland. May be easily located and identified by the straight rows of stems arising from the rhizomes. The latter are very striking when unearthed, with their beginning, fully grown and old stems in long crowded ranks.

484. JUNCUS EFFUSUS L.

COMMON RUSH. CANDLE RUSH.

Marshes, common, very generally distributed, often forming almost solid masses of large extent.

485. JUNCUS BRACHYCEPHALUS (Engelm.) Buchenau. J. canadensis var. Engelm.

SHORT-HEADED RUSH.

Wet places, southeast, Clarke, Miller, rare.

486. JUNCUS BREVICAUDATUS (Engelm.) Fernald. J. canadensis var. Engelm.

NARROW-PANICLED RUSH.

Borders of sloughs at Pine, Ind. (Hill)

487. JUNCUS CANADENSIS J. Gay.

CANADIAN RUSH.

Sandy shores, very common, especially southeastward. One of our most abundant species.

488. JUNCUS PELOCARPUS Mey.

BROWN-FRUITED RUSH.

Sandy wet places, southeast, common. Long Lake, Dune Park.

489. JUNCUS NODOSUS L.

JOINT RUSH.

Wet sands, Hyde Park, south and east, common.
North Evanston, frequent. (Johnson)
Abundant near Du Page River, Naperville.

490. JUNCUS TORREYI Coville.

SCIRPUS RUSH.

Common in wet sands from Miller to Dune Park. (Hill, Umbach)

491. JUNCUS ACUMINATUS Michx.

SHARP-FRUITED RUSH.

Wet places, common southeast. Pine, Miller, Dune Park.

492. JUNCUS ALPINUS INSIGNIS Fries. J. alpinus Vill. J. Richardsonianus Schultes.

RICHARDSON'S RUSH.

Wet sandy soils near the lake, in the dune region. (Hill, Umbach)

493. JUNCUS ARTICULATUS L.

JOINTED RUSH.

Sandy borders of lakes in northwestern Lake Co., Ind. (Hill)
Waukegan sands.

494. JUNCUS MARGINATUS Rostk.

GRASS-LEAVED RUSH.

Moist sandy places, common, Dune Park. "Certainly native." (Hill) West Pullman. Common one mile north of Thornton, Ill.

495. LUZULA CAMPESTRIS MULTIFLORA (Ehrh.) Celak. Juncoides campestre (L) Kuntze. L. Campestris Am. auth.

WOOD RUSH.

Sunny woodlands, very common throughout the Chicago area. One of our very early flowers.

LILIACEAE.

LILIES.

[Melanthaceae (140), Liliaceae (1300), Convallariaceae (215), Smilaceae (200).] These separately treated in Britton and Brown.

Herbs, from bulbs or root stocks, with regular 3-parted flowers, with ovaries superior. Fruit a pod or berry. Many are ornamental plants, some of value as vegetables, many are medicinal, a few very poisonous.

As constituted in Gray, 7th Ed. Manual, a heterogeneous Family of 1855 species, with 39 in our district.

496. TOFIELDIA GLUTINOSA (Michx.) Pers. Triantha glutinosa (Michx.) Baker.

FALSE ASPHODEL.

Bogs, from East Chicago, southeast, common. Prefers a saturated sandy loam, along the slough borders.

Reported from the Des Plaines River, near Maywood as rare. (Hill)
Waukegan moor, rare.

497. UVULARIA GRANDIFLORA Sm.

BELLWORT.

Rich woods, abundant north and west, particularly at home in the rich Des Plaines and Niles woods. Common in the Du Page valley woods.

498. OAKESIA SESSILIFOLIA (L.) Wats. Uvularia L.

SESSILE LEAVED BELLWORT.

Babcock reports it from "Niles woods, rare." No one else seems to have found it in this locality.

499. ALLIUM TRICOCCUM Ait.

WILD LEEK.

Rich soils in woods, very abundant, especially in the moist timber lands along the Des Plaines, Chicago and Du Page rivers.

In early settlement days often used as a food.

Cows feeding in the woods early in the spring often eat the leaves with disastrous results to the butter.

500. ALLIUM CERNUUM Roth.

WILD ONION. NODDING ONION.

Prairies around Chicago, excessively abundant, tinting the whole landscape pink. Very variable in flower color.

Of easy cultivation.

501. ALLIUM CANADENSE L.

WILD GARLIC.

Moist lands, not common, but generally distributed. Particularly showing a preference for moist rich prairie swale margins. Abundant in the moist woodlands west and southwest.

502. HEMEROCALLIS FULVA L.

ORANGE DAY LILY.

Roadsides, occasional here and there growing in dense spreading communities increasing slowly by the extension of the rhizomes. Common in cultivation.

503. HEMEROCALLIS FLAVA L.

YELLOW DAY LILY.

On Irving Park Road one half mile west of Dunning, in large numbers. Thoroughly naturalized.

504. LILIUM PHILADELPHICUM L.

MEADOW LILY.

In moist swales from East Chicago eastward, not so common as in other localities. Probably rare and generally replaced by the variety following.



WOODRUFF

TURK'S CAP LILIES (*Lilium superbum*)

505. LILIUM PHILADELPHICUM ANDINUM (Nutt.) Ker. L. umbellatum Pursh.

WESTERN MEADOW LILY.

Very abundant in wet sandy swales, on moist original prairies, and along sloughs.

Of easy cultivation.

506. LILIUM SUPERBUM L.

TURK'S CAP LILY.

Very abundant in moist situations on the prairies west of Chicago, frequent elsewhere. The region northwest of the Dunning Institution abounds with this fine species. A plant growing in alluvium, near a small creek was eight feet in height and had forty blossoms. Often cultivated and rapidly shifting position by reason of its long rhizome-like bulb outgrowths.

507. LILIUM CANADENSE L.*

WILD YELLOW LILY.

Babcock says "infrequent in wet places."

Bastin says "Hyde Park."

Cowles, "common in meadows."

Prof. Umbach finds it "at Tolleston in 1900."

The author has never seen it near Chicago, all specimens examined proving to be L. superbum, or strongly resembling that species. Having seen thousands of the true Canadense in New Jersey, nothing like them was ever seen about the city or area.

The Field Museum L. canadense are at least one half L. superbum or, as Britton suggests, "a race resembling L. superbum." The author protests against the separation of species by the absence or presence of a few leaf hairs. (See Illustrations of the two species in this book.)

508. ERYTHRONIUM AMERICANUM Ker.

YELLOW ADDER'S-TONGUE. DOG'S-TOOTH VIOLET.

Rich wooded slopes along the Des Plaines River, very rare. This plant becomes very abundant as you go eastward into Michigan.

Occasional on north branch of the Chicago River and the Niles woods. A finer plant than the next.

509. ERYTHRONIUM ALBIDUM Nutt.

WHITE ADDER'S-TONGUE.

Very abundant in moist rich woods west and north. Particularly suited to the alluvial woods along the Des Plaines River.

Much less common southeastward, because of the soil. Very common in all suitable localities south and west. It takes from three to five years to bloom from seed, the bulbs each year growing deeper into the ground.

As the plants increase in age the bulbs become more and more deeply buried.

Let all botanists "taboo" the absurd name "Dog's-tooth Violet," although the name "Adder's-tongue" is about as ridiculous.

*Farwell (Torrey Bulletin 1913) segregates as L. Michiganense and adds "L. Canadense not found in the west."



PEPOON

CANADA LILIES (*Lilium Canadense*)

THE GENUINE TYPE FROM NEW JERSEY. WE DO NOT HAVE SUCH HERE

510. CAMASSIA ESCULENTA (Ker.) Rob. (Quamasia Raf.) Q. hyacinthina (Raf.) Brit.

WILD HYACINTH. QUAMASH.

Moist grassy banks, throughout the prairie region. Especially common in the rich soil near thicket borders along the Calumet, Des Plaines and north branch of the Chicago rivers.

Used by the Indians as a food plant. Easily cultivated.

Lewis and Clark (1794–1805) Expedition lived largely on this plant and related species. "Quamash" is constantly referred to by them in their journals.

Burbank has produced remarkable results with western species.

511. ORNITHOGALUM UMBELLATUM L.

STAR OF BETHLEHEM.

Streets and yards. Escaped, not frequent.

A common pasture plant of western Kentucky.

512. ASPARAGUS OFFICINALIS L.

ASPARAGUS.

Becoming abundant along all roads and in open woodlands. Introduced everywhere and completely at home. A fine example of a bird distributed plant.

Very common throughout the Waukegan sand region and very luxurious.

A clump seven feet in height was found near Miller.

513. CLINTONIA BOREALIS (Ait.) Raf.

CLINTONIA.

Tamarack swamp two miles east of Miller, Ind., abundant. (Umbach, Pepoon)

Evidently a relic of the Wisconsin ice sheet far from its center of growth.

One mile east of Dune Park is a small colony in a white pine swamp.

514. SMILACINA RACEMOSA (L.) Desf. Vagnera racemosa (L.) Morong.

LARGE FALSE SOLOMON'S SEAL. FALSE SPIKENARD.

Rich shaded woods, frequent west and north. Less common southeast in the dunes. Very fine plants at Mineral Springs in the tamarack swamp.

Showy in fruit.

515. SMILACINA STELLATA (L.) Desf. Vagnera stellata (L.) Morong.

FALSE SOLOMON'S SEAL.

Wooded banks, particularly if the soil is sandy. Very common near Lake Michigan north and southeast, on the low wooded sand ridges. Acts as a sand binder.

516. SMILACINA TRIFOLIA (L.) Desf. Vagnera trifolia (L.) Morong.

THREE-LEAVED FALSE SOLOMON'S SEAL.

Locally abundant in cold wet woods near Bowmanville. At present (1926) exterminated. (Pepoon)

Pine and Clarke, Ind. (Moffatt)

Rogers Park, Pine Station and Berry Lake, Ind., Gibsons, Ind. (Babcock)

The necessary conditions for this plant have mostly been destroyed.

517. MAIANTHEMUM CANADENSE Desf. Unifolium canadense (L.) Morong.

WILD LILY OF THE VALLEY. MAY-FLOWER.

Rich wooded banks in moist soil, abundant. In the low-lying thickets of the dune region, flourishing, forming dense communities.

A very dainty plant when in full bloom.

518. POLYGONATUM BIFLORUM (Walt.) Ell.

TWO-LEAVED SOLOMON'S SEAL.

Rich damp woods, north and west, common.

Much less common southeast.

519. POLYGONATUM COMMUTATUM (R. & S.) Dietr.

GREAT SOLOMON'S SEAL.

Wooded banks, in rich soil, occasional throughout the area, but much less common than the preceding.

A conspicuous plant in fruit, the latter being dark blue.

520. CONVALLARIA MAJALIS L.

LILY OF THE VALLEY.

Prof. Hill found it in a moist hollow among the sand hills near Calumet Heights in 1899, growing with Maianthemum as a native, one mile from any dwelling. The location is now destroyed, being a part of Gary.

521. MEDEOLA VIRGINIANA L.

CUCUMBER-ROOT.

Tamarack swamps, Miller, Dune Park and eastward. Common locally. (Umbach, Pepoon)

Niles woods. (Johnson)

522. TRILLIUM SESSILE L.

RED-GREEN TRILLIUM.

Hill has an entry, "Bloom, Ill., 1865." Babcock says, "Rich moist woods, infrequent." Seems to be confused with T. recurvatum, though quite distinct in appearance.

Prof. Umbach says, "a few were certainly growing near the forks of the Du Page south of Naperville. Collected here every year by students of N. W. College."

Was found in 1915 in rich woods on Salt Creek northwest of Chicago, a number of plants being gathered and given to the writer.

The common species in the moist woods near New Lenox, where it is very abundant.

523. TRILLIUM RECURVATUM Beck.

RED TRILLIUM. BLOODY BUTCHER.

Rich woodlands north and west, very abundant. The earliest species to bloom, appearing by April 20th.



PEPOON

GREAT-FLOWERED TRILLIUM (*Trillium grandiflorum*)



PEPOON

GREAT-FLOWERED TRILLIUMS, COMMON VIOLETS

524. TRILLIUM GRANDIFLORUM (Michx.) Salisb.

SHOWY TRILLIUM. GREAT-FLOWERED TRILLIUM. WOOD LILY.

Very common in the rich wooded areas from Evanston north and west, frequent southeast, becoming very common in Porter Co. South of Naperville, common.

A double flowered form has been observed in the ravines near Glencoe; specimens with stalked sepals are not uncommon. (N. & R.)

Plants with four leaves, sepals and petals and eight stamens are occasionally found.

525. TRILLIUM CERNUUM L.

NODDING TRILLIUM.

Moist woods, Bowmanville and occasionally along the north shore. Originally abundant at Wilson Ave. and Broadway, Chicago. This was as late as 1900. Trilliums, cypripediums, aquilegias, thalictrums and many other fine species were common here. A fine illustration of the effect of city expansion in the extermination of plant species.

526. TRILLIUM DECLINATUM (Gray) Gleason. T. erectum var. Gray.

NODDING TRILLIUM. ILL-SMELLING TRILLIUM.

Woods, Bowmanville and along the Chicago River. Common in woods along the Des Plaines River, at Downers Grove, tamarack swamps southeast. Frequent at New Lenox.

527. ALETRIS FARINOSA L.

COLIC ROOT.

Abundant in sandy swales in the Lake Michigan region of Lake and Porter Cos., Ind., and north of Waukegan.

Oak Glen. (Raddin)

In southwestern Michigan often covers large areas, actually tinting surface by the number of plants closely crowded.

528. SMILAX HERBACEA L.

CARRION-FLOWER.

Thickets in rich soil, occasional. The globular heads of blue-black fruits long persisting. Apparently this striking fruit is untouched by birds, gradually drying on the plants.

529. SMILAX HERBACEA PULVERULENTA (Michx.) Gray.

ROUGH CARRION-FLOWER.

With the last, occasional throughout.

530. SMILAX ECIRRHATA (Engelm.) Wats.

SMALL CARRION-FLOWER.

Common on wooded banks and rich sloping woodlands. A very much smaller plant than the last, blooming very early in May.

531. SMILAX ROTUNDIFOLIA L.

GREEN BRIER. CAT BRIER.

Moist thickets in the eastern part of our range where it is common.
In the Forest Preserve below Willow Springs.

532. SMILAX ROTUNDIFOLIA QUADRANGULARIS (Muhl.) Wood.

FOUR-ANGLED GREEN BRIER.

With the species and probably more common.

533. SMILAX GLAUCA Walt.

PALE GREEN BRIER.

Evanston, Niles, South Chicago. (Dodge) Whiting, Ind. (Herman Jaeger) Does not seem to be found of late years as no collector of today reports it.

534. SMILAX HISPIDA Muhl.

PRICKLY GREEN BRIER. CAT-BRIER.

Moist thickets throughout, common, particularly north and west. One of our two woody monocots in the Illinois portion of our area.

DIOSCOREACEAE.

YAMS.

Climbing plants with ribbed leaves arising from underground stems and small greenish flowers. A number are esculent or ornamental.
175 species, mostly tropical, with 1 in our district.

535. DIOSCOREA VILLOSA L.

WILD YAM.

Rich wooded thickets, frequent, the pistillate plant conspicuous in fruit, much less common than the staminate plant.
Used in medicine and as an ornamental.

AMARYLLIDACEAE.

AMARYLLIS FAMILY.

Herbs, chiefly bulbous and scapose, with linear leaves and perfect 3-parted flowers, with inferior ovaries. Resembling the lilies. Many are ornamental.
800 species, mostly of warm regions, with 1 native species.

536. HYPOXIS HIRSUTA (L.) Coville. H. erecta L.

STAR GRASS.

Moist grass lands, very abundant. Always a feature of genuine unbroken prairie lands.



WOODRUFF

BLUE FLAGS (*Iris versicolor*)

IRIDACEAE.

IRIS FAMILY.

Herbs with equitant 2-ranked leaves and perfect 3-parted epigynous flowers which are spathaceous. Highly ornamental.

1000 species of wide distribution with 7 in our district.

537. IRIS VERSICOLOR L.

BLUE FLAG.

Marshes and pond and stream margins, common. Easily cultivated in garden soil. The cork-covered seeds are significant.

538. IRIS PUMILA L.

DWARF IRIS.

Occasional as an escape from cemeteries and residence yards. Several clumps along the C. B. & Q. near Naperville. (Umbach)

539. IRIS GERMANICA L.

FLEUR DE LIS.

Occasional clumps are found on roadsides near dwellings.

540. SISYRINCHIUM ALBIDUM Raf.

PALE BLUE-EYED GRASS.

Common on prairies and meadows.

541. SISYRINCHIUM MUCRONATUM Michx.

SHARP-POINTED BLUE-EYED GRASS.

Frequent in fields and meadows; more slender than S. albidum, with darker flowers. Intergrades with S. albidum. (Hill)

542. SISYRINCHIUM ANGUSTIFOLIUM Mill.

BLUE-EYED GRASS.

Dry prairie knolls and grassy banks and bluffs, throughout in suitable locations.

543. SISYRINCHIUM GRAMINEUM Curtis. S. graminoides Bick. S. anceps Man. Ed. 6.

COMMON BLUE-EYED GRASS.

Similar locations as the preceding, but a less common species. Hill says "not a common form."

ORDER 9—SCITAMINALES

ARROWROOTS.

A Tropical Order.



WOODRUFF

SMALL YELLOW LADY'S SLIPPER (*Cypripedium parviflorum*)

ORDER 10—ORCHIDALES

THE ORCHIDS.

Two Families, the Burmannia and Orchid.

BURMANNIACEAE.

BURMANNIA FAMILY.

Small insignificant annuals, mostly tropical. Until within 13 years (1926) not known in our flora, but during the season of 1913 a representative was discovered by U. of C. students and reported. This serves to emphasize the difficulty of producing a complete flora of any region.

544. THISMIA AMERICANA.

AMERICAN THISMIA.

Sedgy swamp associated with Selaginella apus, near Lake Calumet. (Miss Pfeiffer, Dr. Cowles)

"A remarkable discovery, no related plants within many hundreds of miles; the Genus never before found in North America." (Cowles)

The Type plant is in the Field Museum herbarium.

ORCHIDACEAE.

ORCHIDS.

Herbs, with irregular, epigynous, 3-parted flowers and stamens commonly reduced to two or one.

An immense family variously estimated from nine to ten thousand species. There are within our limits twenty-nine species.

545. CYPRIPEDIUM PARVIFLORUM Salisb.

SMALL YELLOW LADY'S SLIPPER.

Abundant in moist thickets in the vicinity of Clarke Junction and Clarke, Ind. Very fragrant and easily distinguished from the larger form by the red-brown perianth.

The favorite haunts of this beautiful species is rapidly being usurped by railroads and a few years will doubtless see the last of their race in this region.

546. CYPRIPEDIUM PARVIFLORUM PUBESCENS (Willd.) Knight.

C. parviflorum Salisb. C. pubescens Willd. C. hirsutum Auth.

YELLOW LADY'S SLIPPER.

Ravines of north shore. Skokie Marsh and formerly abundant eastward from Pine Station, Ind. North shore woods yield a specimen here and there, becoming very rare.

Woods of Du Page River valley.

In 1900 a colony of 250 blooming plants was found two miles east of Pine, Ind., now a part of the Gary district.

Mr. Jens Jensen reports a similar colony from the dune region in 1921.



PEPOON

THE SHOWY LADY'S SLIPPER (*Cypripedium hirsutum*)
AT CLARKE, INDIANA



WOODRUFF

THE WHITE LADY'S SLIPPER (*Cypripedium candidum*)

547. CYPRIPEDIUM CANDIDUM Muhl.

WHITE LADY'S SLIPPER.

Abundant in wet swales near Dunning and in the neighborhood of Clarke Junction and Pine and Clarke, Ind.

Common on marsh borders of the Waukegan moorland.

Occasional throughout area in suitable localities. Abundant near Mineral Springs.

Rapidly becoming exterminated by agricultural procedure.

548. CYPRIPEDIUM HIRSUTUM Mill. C. spectabile Salisb. C. reginae Walt.

SHOWY LADY'S SLIPPER.

Formerly found by the thousands near Clarke Junction, Ind., on swale borders; less frequent eastward; rare in ravines north. Rapidly becoming exterminated by professional orchid gatherers, who collect the flowers for florists. One teacher gathered 889 in one swamp in southwestern Michigan, and only picked freshly opened specimens. Easily cultivated.

Ravines north, rare. (Johnson)

549. CYPRIPEDIUM ACAULE Ait. Fissipes acaulis (Ait.) Small.

STEMLESS LADY'S SLIPPER. MOCCASIN FLOWER.

Formerly a large colony north of Calumet River, some three miles or so east of Clarke, Ind., now the site of the Gary Steel Plant. (Umbach, Hill, Moffatt, Pepoon)

Originally found in the woods north of Stony Island. ("Hog Island." Brennan)

550. ORCHIS SPECTABILIS L. Galeorchis Rydb.

SHOWY ORCHIS.

Rich open woods, very local, Warrenville, Des Plaines River, Bowmanville, North Shore, Niles Woods. A practically exterminated species.

The writer has seen the forest floor a solid mass of color, given it by this beautiful species in the woods of Fulton Co., Ill.

551. HABENARIA BRACTEATA (Willd.) R.Br. Coeloglossum bracteatum (Willd.) Parl.

BRACTED ORCHIS.

Very infrequent in rich damp woods north and west. Warrenville, several. (Moffatt)

Moist woods and shaded banks, infrequent in the ravines northward and in woods at Niles. Rare elsewhere. (H. & R.)

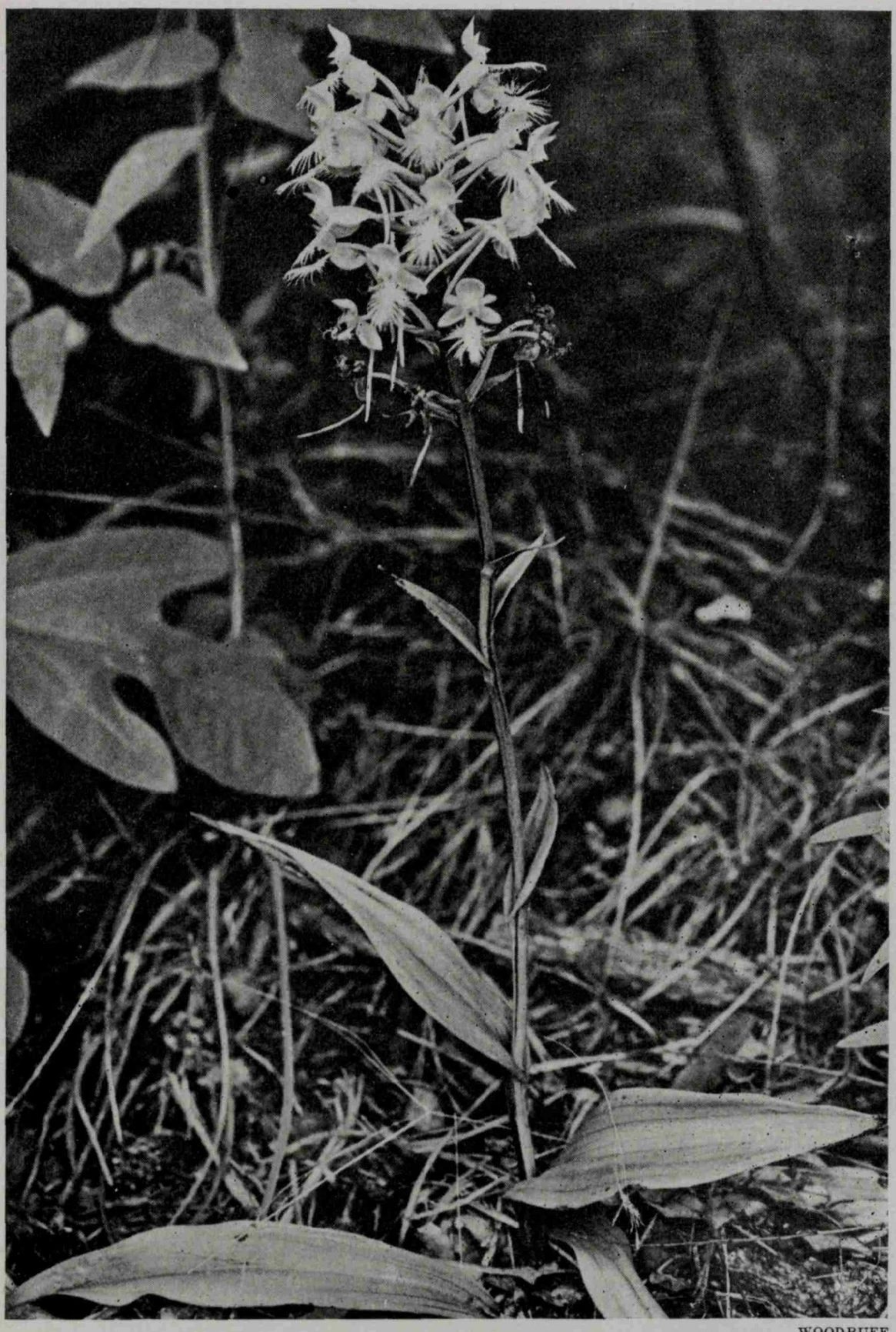
Pine woods, Casella and Miller, Ind. Pine Station, Ind. (Bastin)

552. HABENARIA FLAVA (L.) Gray. Perularia flava (L.) Farwell.

YELLOW-GREEN ORCHIS.

Moist grassy swales, Lake and Porter Co., Ind., frequent.

Glencoe, Maywood, Grand Crossing. Berry Lake and Pine Station, Ind. Riverside. (Babcock) Wet pine woods, Edgemoor, Ind. (Hill)



WOODRUFF

THE ORANGE FRINGED ORCHIS (*Habenaria ciliaris*)



W. HERZBERG

ORANGE FRINGED ORCHIS, ENLARGED DETAIL

553. HABENARIA HYPERBOREA (L.) R. Br. Limnorchis hyperborea (L.) Rydb.

NORTHERN ORCHIS.

Low thickets, Miller and Dune Park, rare. Also on Waukegan flats. (Pepoon, Gates, Umbach)

554. HABENARIA DILATATA MEADIA (Rydb.) Ames. Limnorchis Rydb.

NORTHERN ORCHIS.

Wet sandy flats, north of Waukegan, scarce.

555. HABENARIA CLAVELLATA (Michx.) Spreng. Gymnadeniopsis clavellata (Michx.) Rydb.

SMALL ORCHIS. SMALL GREEN ORCHIS. BOG ORCHIS.

From Pine, Ind., eastward, in rich moist hummocks in shade, very local and rare.

Wet rich woods, rare and scattered.

Glencoe. Miller and Casella, Ind. Wet grassy lands, Sheffield, Ind. (Hill) Pine Station, Ind. (Bastin)

Lake and Calumet, Ind. (Babcock)

556. HABENARIA HOOKERI Torr. Lysias Hookeriana (Gray) Rydb.

HOOKER'S ORCHIS.

An occasional plant in low thickets west of Clarke Junction, Ind. (Umbach, Hill, Pepoon) Rich woods, Des Plaines, rare. (Moffatt)

Glencoe, Lakeside and Winnetka, frequent. (Raddin)

Ravines of the northern portion of our district, rare. Rich woods near Niles. Wet woods, Miller, Ind. Glencoe. (Babcock) River Park. (Bastin) Pine woods, Edgemoor, Ind. (Hill) Winnetka. (Johnson)

557. HABENARIA CILIARIS (L.) R. Br. Blephariglottis ciliaris (L.) Rydb.

ORANGE FRINGED ORCHIS.

Abundant near Aetna, Lake Co., Ind. Very showy and probably soon exterminated. (Umbach, Pepoon)

The flowers show curious semblances to witches' heads.

558. HABENARIA LACERA (Michx.) R. Br. Blephariglottis lacera (Michx.) Farwell.

RAGGED ORCHIS. SMALL FRINGED ORCHIS.

Moist swales, common southeast. Very abundant locally in damp soil bordering marshes, sloughs and streams.

559. HABENARIA LEUCOPHAEA (Nutt.) Gray. Blephariglottis leucophaea (Nutt.) Farwell

WHITE FRINGED ORCHIS.

Wet prairies adjacent to Chicago. Formerly very common south of Elston Ave. and west of Kedzie, Chicago. (Pepoon) The location now entirely built over.

Becoming increasingly rare. A characteristic moist prairie plant extending across northern Illinois.



WOODRUFF

ARETHUSA (*Arethusa bulbosa*)

560. HABENARIA PSYCHODES (L.) Sw. Blephariglottis psycodes (L.) Rydb.

PURPLE FRINGED ORCHIS.

Damp woods southeast, becoming very common as Michigan is approached. Wilmette. (Raddin)
Clarke, Ind., a number of specimens. (Umbach)

561. POGONIA OPHIOGLOSSOIDES (L.) Ker.

ROSE POGONIA.

Abundant along swales from Clarke Junction, Ind., eastward. Very fragrant.
A white form is occasional.

562. POGONIA TRIANTHOPHORA (Sw.) B. S. P. Triphora trianthophora (Sw.) Rydb.

NODDING POGONIA.

Open moist woods, Miller, Ind. (Babcock) Wet pine woods, Casella. (Hill) Very rare, Pine. (Hill, 1898) Miller and Clarke, Ind. (1896 and 1898, Umbach)
Always very local in distribution.

563. CALOPOGON PULCHELLUS (Sw.) R. Br. Limodorum tuberosum L.

CALOPOGON. GRASS PINK.

Abundant on Waukegan flats and more so in the moist sand regions of Lake and Porter Cos., Ind.
Normally a bog plant, it grows even on bluff crowns in northwestern Illinois. (Pepoon)

564. ARETHUSA BULBOSA L.

ARETHUSA.

Formerly abundant in a swamp at Miller, north of Wabash Ry. Now apparently extinct. (Umbach, Pepoon)
Pine Station and Casella, Ind. Miller, Ind. (Bastin, Hill)
Marsh near South Chicago, now exterminated. (Bastin)
Near East Gary, a large colony. (Clute)
Very local in distribution and very easily destroyed.

565. SPIRANTHES GRACILIS (Bigel.) Beck. Ibidium gracile (Bigel.) House.

LADIES' TRESSES.

Near the sloughs east and south of Pine, Ind., probably overlooked. (H. & R.)
Sandy soil of the southeast, infrequent or rare. (H. & R.)
Near Mineral Springs, very rare.
Northern Cook Co. (H. & R.)



HERZBERG

LADIES' TRESSES (*Spiranthes gracilis*)

566. SPIRANTHES CERNUA (L.) Rich. Ibidium cernuum (L.) House. Gyrostachys Pers.

LARGE LADIES' TRESSES.

Abundant in moist ground throughout the lake shore region. Formerly abundant at Ravenswood on the damp flats.

One of our last fall flowers.

A very fragrant and interesting blossom.

567. EPIPACTIS PUBESCENS (Willd.) A. A. Eaton. Peramium pubescens (Willd.) MacM.

RATTLESNAKE PLANTAIN.

Wooded banks along the sloughs of Lake Co., Ind., rare. (Pepoon, Umbach)

Niles woods. (Johnson, Raddin)

Very common on the bluffs of Fort Creek near Mt. Tom.

568. CORALLORRHIZA TRIFIDA Chatelain. C. Corallorrhiza (L.) Karst.

EARLY CORAL ROOT.

Sand ridges east of Berry Lake, Ind. (Hill)

Clarke Junction. (Umbach)

Frequent in the dune swale woods northeast of Dune Park.

569. CORALLORRHIZA MACULATA Raf. C. multiflora Nutt.

SPOTTED CORAL ROOT.

Riverside. Palatine. Forest Hill. Berry Lake, Ind., in woods. Rare. (Babcock, Hill)

Bluffs of Fort Creek near Mt. Tom, rare.

An abundant species as one goes eastward toward Michigan.

570. MICROSTYLIS MONOPHYLLOS (L.) Lindl. Malaxis monophylla (L.) Sw.

ADDER'S MOUTH.

A few plants in a cold tamarack swamp near Dune Park in the vicinity of the Lake Shore and Michigan Southern Railway. (Clarke)

571. LIPARIS LILIIFOLIA (L.) Rich.

PURPLE TWAYBLADE.

Rich woods, north and northeast, very rare. Only an occasional isolated plant.

572. LIPARIS LOESELII (L.) Rich.

GREEN TWAYBLADE.

Common on the banks of swales in Lake and Porter Cos., Ind., and on the Waukegan flats.

573. APLECTRUM HYEMALE (Muhl.) Torr.

PUTTY ROOT.

A few plants associated with Thuja on the lake bluff at Highland Park. Babcock in 1888 found one clump at Berry Lake, Ind. Hill found it at Wheeler, Ind.

The plant is common in the beech woods of Indiana and southwestern Michigan.

Originally not infrequent in the New Lenox forest. (Clute)

I. SPECIAL KEY TO CERTAIN DICOTYLEDONOUS FAMILIES, GENERA AND SPECIES. HERBS.

A number of families are composed of plants that are readily placed in their respective family groups by simple, well-marked characters. These are found at the beginning of this key. The special plants may be determined by the keys found at the beginning of these particular families.

N.B. Use the following special Key* first *with all plants that are plainly Dicots.

1	Plants without ordinary leaves but with prickles or scales instead	A	
1	Plants with ordinary foliage, although perhaps much reduced in size	F	
A	Plants jointed, fleshy, prickly	Prickly Pear	1243
A	Plants not thus	B	
B	Plants climbing by twining, usually yellowish .	Dodders	1418–1423
B	Plants erect	C	
C	Plants white	Indian Pipe	1340
C	Plants tawny or pink	Pine Sap	1341
C	Plants not as above	D	
D	Plants much branched, purplish, rather large .	Beech-Drops	1587
D	Plants but little branched from the base—naked, scapose above	E	
D	Unbranched, stout, light brown, clustered . .	Cancer-Root	1588
D	Unbranched, slender, green	Bartonia	1386
E	Scapes many, yellowish	Yellow Broom Rape . .	1590
E	Scapes 1–4, lavender	Pale Broom Rape . . .	1589
F	Plants aquatic, leaves dissected, bladder bearing; flowers very irregular	Bladderworts . .	1580–1586
F	Plants not aquatic	G	
G	Flowers numerous and usually small, in compact heads, having at base many (usually) small bracts, forming an involucre	H	
G	Flowers not thus	I	
H	Flowers of one or two kinds, the central (disk) tubular-shaped, the outer, if present, flat, daisy-like	Asters or Thistles .	1658–1903
H	Flowers all flat, dandelion-like, sap milky . .	Chicory Family . .	
I	Sap milky; leaves mostly opposite; flowers in umbels with crown	Milkweeds . . .	1394–1408
I	Not thus	J	
J	Flowers usually small, in umbels; leaves mostly decompound	K	
J	Not thus	L	
K	Fruit dry	Carrot Family . .	1288–1321
K	Fruit fleshy	Ginseng Family . .	1283–1287
L	Leaves from ground, 3 parted, acid	Oxalis	1096–1100
L	Leaves not 3 parted	M	

M	Flowers violet-like	Violets	1217–1241
M	Flowers not violet-like	N	
N	Plants often weedy, with sheathing stipules; stems jointed	Knotweeds	656–689
N	Plants not thus	O	
O	Plants with squared stems, aromatic; flowers with two lips; leaves paired	Mints	1461–1511
O	Plants not thus	P	
P	Leaves opposite or alternate; flowers very irregular, in one piece; fruit a many-seeded capsule	Figworts	1534–1579
P	Leaves alternate; flowers wheel or funnel-form, in one piece, regular; fruit, a berry	Nightshades	1512–1530
P	Not thus	Q	
Q	Stamens very numerous, united in a column about pistil	Mallows	1181–1193
Q	Stamens 10; flowers usually sweet-pea form (papilionaceous)	Pea or Bean Family	1015–1090
Q	Stamens 6; flowers 4 parted	Mustard Family	832–892
Q	Stamens 10 usually; flowers regular; leaves paired from swollen nodes	Pinks	727–756

II. GENERAL KEY TO THE HERBS OF DICOTYLEDONOUS FAMILIES, GENERA AND SPECIES.

Plants not as above, located by the Special Key		R
R	Flowers normally green in general tint	I
R	Flowers normally white in general tint	II
R	Flowers normally yellow or orange in general tint	III
R	Flowers normally red or reddish in general tint	IV
R	Flowers normally blue or violet in general tint	V

I. FLOWERS GREENISH

*	Plants of ordinary situations	S	
*	Plants of water or very wet places	r	
S	Plants weedy with insignificant flowers; many common weeds; in yards and fields	T	
S	Plants not weedy; in woods or wild places	n	
T	With root-leaves only in rosettes; flowers very small, in dense spikes	Plantains	1597–1603
T	With leafy stems	U	
U	Plants with milky sap; leaves usually very small and opposite	Euphorbias	1119–1139
U	Plants not with milky sap	V	
V	Plants with stinging hairs	W	
V	Plants not with stinging hairs	X	
W	Leaves opposite, long	Nettle	647
W	Leaves alternate, broad	Wood Nettle	649
X	Leaves 3 veined	Y	
X	Leaves not 3 veined	a	
Y	Plants of shade, low, stem almost translucent	Richweed	650
Y	Plants not thus	Z	

Z	Plants mealy, tall, in yards, etc.	Goosefoot 698
Z	Plants not mealy, low, weak, in wild places.	Pelltory 652
a	Leaves palmately compound of 3–7 parts, heavily scented	Hemp 642
a	Leaves simple	b
b	Leaves very slender, often sharp pointed. Plant a tumbleweed	Russian Thistle 709
b	Without the above combined characters	c
c	Plant of sandy shores; small narrow leaves.	Bugseed 707
c	Plant not of sandy shores.	d
d	Leaves very strong scented	e
d	Leaves not strong scented.	f
e	Leaves sinuate	Mexican Tea 691
e	Leaves deeply incised	Jerusalem Oak 693
f	Plant a rounded tumbleweed of sands; leaves linear	Cycloloma 690
f	Plant not thus	g
g	Flowers densely clustered with copious dry, chaffy, often colored, bracts	Amaranths 710–716
g	Similar and found growing in very damp places	Acnida 717–720
g	Not with these characters.	h
h	Flowers in small spike; leaves hairy, usually purple tinted.	Mercury 1122
h	Not thus	i
i	Plants mealy or scurfy.	j
i	Plants not mealy or scurfy, usually smooth.	l
j	Plants silvery scurfy	Silver Orach. 706
j	Plants not silvery scurfy	k
k	Leaves linear	Narrow Leaved Pigweed . 703
k	Leaves oblong, nearly entire	Wood Pigweed 702
l	Leaves sinuate toothed, white beneath	Glaucous Pigweed . . . 696
l	Leaves more or less triangular	m
l	Leaves not triangular; plant coarse, spreading.	Orach. 704
m	Tall, erect; leaves angled, bright green	Maple Leaved Goosefoot . 697
m	Coarse, spreading	Orach. 705
m	Low, erect, spreading, pale	City Goosefoot 701
n	Leaves all from root	o
n	Leaves not all from root	p
o	Leaves small; flowers in one sided racemes	Secund Shin Leaf . . .1335
o	Leaves large, oblong; flowers in panicle; in wet places.	Marsh Saxifrage . . . 906
o	Leaves large, round, cordate; flowers in narrow panicles; dry knolls	Alum Root 907–908
p	Leaves verticillate, very small	Polygala 1118
p	Leaves large, single, tri-ternately compound	Blue Cohosh. 815
p	Leaves large, 2–3, tri-ternately compound	Early Meadow Rue. . . 784
p	Leaves numerous	q
q	Leaves narrow, lance; flowers axillary	False Loosestrife . 1255–1256
q	Leaves lance; flowers with yellow tint in cyme	Ditch-Stonecrop. . . . 905
r	Leaves finely dissected, in deep water	Water Milfoils . . 1279–1281
r	Leaves not finely dissected	s
s	Leaves alternate, some lance, some finely comb-divided	Mermaid Weed. . 1143–1282

s	Leaves opposite	t	
t	Leaves very small, oblong to linear	Water Starworts	1140–1142
t	Leaves small, round, heartshaped	Golden Saxifrage	911

II. FLOWERS WHITISH

	Plants growing in water	A	
	Plants not growing in water normally	C	
A	Flowers small in dense spikes; leaves ribbed cordate	Lizard's Tail	574
A	Flowers not as above	B	
B	Leaves trifoliate; flowers in a loose raceme, fringed	Buck Bean	1387
B	Leaves finely dissected; flowers ½″, regular	White Water Crowfoots	770–771
B	Leaves very large, heartshaped; flowers very large, many petaled	Water Lily	766–767
C	Leaves all seemingly from the root or underground parts	D	
C	Leaves plainly borne on aerial stems	P	
D	Leaves simple, undivided	E	
D	Leaves simple, lobed or cleft	J	
D	Leaves compound, of three or more divisions	L	
E	Leaves very small, covered with viscid, glandular hairs	F	
E	Leaves larger, not so covered	G	
F	Leaves round	Round Leaved Sundew	899
F	Leaves oblong	Long Leaved Sundew	900
G	Flowers single on long stalk with green stripes	Parnassia	912
G	Flowers several in a raceme	H	
G	Flowers single on a short stalk, waxy, fragrant	One Flowered Pyrola	
H	Leaves 1″ or so thick, shining	Shining Shinleaf	1338
H	Leaves not thus, dull	I	
I	Leaves small; flowers with much green	Greenish Shinleaf	1336
I	Leaves larger, 2-3″, thin, elliptical	Large Leaved Shinleaf	1337
J	Plant with red sap; flowers large, short-lived	Blood-Root	820
J	Plant not with red sap	K	
K	Leaf large, divided into two similar parts	Twinleaf	814
K	Leaf medium, divided into three lobes; flowers also rose and violet	Hepaticas	789–790
L	Leaf trifoliate	M	
L	Leaf decompound	N	
M	Leaves thin, hairy; leaflets straight veined	Strawberries	964–966
M	Leaves thick, shining; roots yellow	Gold Thread	801
N	Leaves two or three times divided; flowers in umbels; roots thickened	Rue Anemone	788
N	Leaves much dissected; flowers in racemes	O	
O	Flowers heartshaped at base; roots with yellow tubers	Squirrel-Corn	828
O	Flowers spurred at base; leaves from granulated bulb	Dutchman's Breeches	827
P	Leaves simple, in one piece, however much divided	Q	
P	Leaves compound, three or more pieces	r	
Q	Leaves arranged in pairs at each node	R	

Q	Leaves arranged three or more at each node	a	
Q	Leaves arranged singly at each node	e	
R	Leaves a pair at summit of stem, with a flower in the fork	S	
R	Leaves a pair at summit of stem, with many small flowers in a raceme	Bishop's Cap	909–910
R	Leaves of stem, several or many	T	
S	Flowers large, waxy, of numerous petals; leaves very large, cleft	May Apple	812
S	Flowers small, seemingly without floral envelope; stamens many, white	Golden Seal	808
T	Plant trailing with small, round, shining leaves	Partridge Berry	1618
T	Plants erect or spreading	U	
U	Plant with milky sap; oblong, entire leaves and cymose flowers	Indian Hemps	1391–1393
U	Plants without milky sap	V	
V	Leaves entire, lance form; flowers axillary	Button Weed	1617
V	Leaves toothed or deeply divided	W	
W	Leaves parted into 7–13 narrow divisions; flowers axillary	Ellisia	1434
W	Leaves parted into 3–7 narrow divisions; flowers panicled	Valerian	1642
W	Leaves merely toothed	X	
X	Leaves oblong, short stalked; flowers in spikes	White Vervain	1451
X	Leaves oval, slender stalked; flowers in racemes	Y	
Y	Leaves cordate	Enchanter's Nightshade	1278
Y	Leaves rounded at base	Enchanter's Nightshade	1277
a	Plants flat on ground with radiating stems	Carpet Weed	729
a	Plants not flat on the ground	b	
b	Plants weak, declined or trailing; stems 4 angular	Bedstraws	1604–1616
b	Plants erect, stems not square	c	
c	Stems low with about 6 long lance form leaves; flower star like	Star Flower	1367
c	Not as above	d	
d	The whorled leaves sessile; plant silky; flower large, purplish tinted	Pasque Flower	791
d	The whorled leaves stalked, 3 divided; flowers long stalked	Anemones	792–796
e	Plants large and coarse	f	
e	Plants small, more or less delicate	h	
f	Plants very heavy scented; flowers large, long, funnel-form	Jimson Weed	1531
f	Plants not heavy scented	g	
g	Plant succulent; flowers small, in racemes	Pokeweed	722
g	Plant not succulent; flowers very small, in racemes; fruit a bur	Beggar's Lice	1437
h	Leaves thick, shining, evergreen, remotely toothed	i	
h	Leaves not thus	j	
i	Leaves spotted with white	Pipsissewa	1334
i	Leaves unspotted	Pipsissewa	1333
j	Leaves plainly palmate veined	k	

j	Leaves plainly pinnate veined	l	
k	Leaves round, heartshaped, slightly lobed, procumbent	Mallows	1184
k	Leaves finely divided into narrow lobes; flowers also rose color	Musk Plant	1187
l	Leaves small, narrow, linear to lance to oblong, entire	m	
l	Leaves medium, sinuate margined; flowers large, 4 parted	Showy Evening Primrose	1272
l	Leaves large, coarse; flowers medium, in clusters	*	
*	Leaves 5–7 lobed; stems fleshy	Water Leaf	1432
*	Leaves 5–7 parted; stems fleshy; flower clusters dense	Water Leaf	1431
m	Plants with milky sap	n	
m	Plants without milky sap	o	
n	Plants very low, glandular; flowers very small	Croton	1120
n	Plants tall, 1½ to 3 feet, leaves very numerous; flowers like white forget-me-nots	Flowering Spurge	1132
o	Flowers without petals in terminal clusters, small; leaves very numerous	Comandra	653
o	Flowers with separate, very irregular petals; flowers in dense spikes	Seneca Snake Root	1114
o	Flowers with united petals	p	
p	Plant very smooth; leaves broad and thin; wet places	Water Pimpernel	
p	Plants not smooth	q	
q	Plants hoary, rough; leaves narrow; flowers leafy-bracted	Gromwell	1444
q	Plants bristly, hairy; flowers in terminal racemes	White Forget-Me-Not	1442
r	Leaves decompound	s	
r	Leaves simply pinnate	x	
s	Plants small, spring blooming	False Rue Anemone	799
s	Plants large	t	
t	Flowers in small, dense clusters in fork of large leaves	u	
t	Flowers in large terminal panicles	v	
u	Petals like the stamens; pedicels thick; fruit white	White Baneberry	807
u	Petals broad; pedicels slender; fruit red	Red Baneberry	806
v	Filaments capillary, drooping	w	
v	Filaments club-shaped, ascending; panicles very large	Large Meadow Rue	787
w	Foliage strong scented, glandular	Meadow Rue	786
w	Foliage not strong scented, not glandular, purple stemmed	Purple Meadow Rue	785
x	Stems sparingly soft hairy	Wood Geum	978
x	Stems bristly hairy	Swamp Geum	979
x	Stems clammy brown hairy above; leaflets 7–11	White Potentilla	967

III. FLOWERS WITH YELLOW OR ORANGE PREDOMINATING

A	Plants growing in water	B	
A	Plants not growing in water	D	
B	Leaves small, dissected; flowers very bright color	Water Crowfoot	773

B	Leaves large; flowers large to very large, not bright	C	
C	Leaves very large, attached near center to leaf-stalk; flowers cream color	Lotus	768
C	Leaves large, attached at tip of deep sinus to leaf-stalk; flowers yellow	Yellow Pond Lily	763–765
D	Leaves and stems very succulent; fields and gardens	Purslane	761
D	Leaves and stems not succulent	E	
E	Plants with yellow or deep colored sap	F	
E	Plants with clear sap	G	
F	Juice bright yellow; stems naked below; flowers large, 4 parted	Wood Poppy	824
F	Juice orange; stems leafy; flowers small, 4 parted	Celandine	823
G	Leaves whorled; plant very tall; flowers spotted, innumerable; leaves 4	Columbo	1385
G	Leaves whorled; plant low, slender; flowers few, unspotted; leaves 4–6	Four Leaved Loosestrife	1359
G	Leaves two at a node	H	
G	Leaves one at a node	T	
H	Plant creeping, in wet places; leaves round	Moneywort	1360
H	Plant not as above	I	
I	Leaves with many clear or black dots	J	
I	Leaves undotted	R	
J	Plant tall, coarse; flowers large	Large St. John's-Wort	1194
J	Plant not thus	K	
K	Flowers with black spots	L	
K	Flowers without black spots	M	
L	Leaves black dotted, oblong	Spotted St. John's-Wort	1196
L	Leaves not black dotted, linear-oblong	St. John's-Wort	1195
M	Leaves very small, awl-like, minute; stems wiry; flowers tiny	Pinweed	1205
M	Leaves not thus	N	
N	Stems 4 angled; leaves oblong; stamens very numerous	O	
N	Stems not 4 angled; leaves small, nerved; stamens few, 5–12	P	
O	Stem angles with narrow raised lines, woody based	St. John's-Wort	1195
O	Stem angles obscure, not woody; leaves elliptic	Broad Leaved St. John's-Wort	1200
P	Leaves soft, broad, 5 nerved; stems weak, decumbent	Weak St. John's-Wort	1201
P	Leaves firm, narrow; stems slender, erect	Q	
Q	Leaves linear, 1–3 nerved	Canada St. John's-Wort	1204
Q	Leaves lance, 6–7 nerved	Greater St. John's-Wort	1194
R	Leaves linear, rigid; stems square; wet places	Narrow Loosestrife	1366
R	Leaves ovate-lance, large, thin, ciliate-stalked	Great Loosestrife	1363
R	Leaves lanceolate, medium or small	S	
S	Flowers in dense axillary clusters; often in water	Swamp Loosestrife	1362
S	Flowers in terminal racemes; in low grounds	Racemed Loosestrife	1360
S	Flowers axillary, few not clustered	Lance Loosestrife	1364

T	Leaves thick, succulent; plant spreading, flat; flowers star-like	Stone Crop	902
T	Leaves ordinary; plants erect	U	
U	Leaves much divided or compound	V	
U	Leaves little divided, merely toothed or entire	p	
V	Leaves abruptly pinnate, with entire leaflets	W	
V	Leaves not thus	Y	
W	Leaflets large; plant tall; flowers panicled; pods very flat, large	American Senna	1022a
W	Leaflets small; plant low; flowers in axillary clusters; pods small	X	
X	Leaflets 10–15 pair; flowers large	Partridge Pea	1020
X	Leaflets 10–20 pair; flowers very small; plant usually small	Sensitive Pea	1021
Y	Leaves much dissected; flowers spurred, odd, in racemes, golden yellow	Golden Corydalis	831
Y	All as above except flowers pale yellow	Pale Corydalis	829
Y	Leaves ternately divided or compound or trifoliate	f	
Y	Leaves pinnately divided or compound	a	
Y	Leaves palmately compound of 5 or more leaflets	Z	
Z	Leaves palmately compound of 5–9 slender toothed leaflets	Pale Potentilla	971
Z	Leaves palmately compound of 5 serrate leaflets, green	Cinquefoil	976
Z	Leaves palmately compound of 5 deeply divided leaflets, white, wooly	Silver Cinquefoil	970
a	Leaflets numerous, 5–21	b	
a	Leaflets few, 3–5	e	
b	Simply pinnate, leaflets silvery; plant with long runners; in sand	Silver Weed	975
b	With alternating large and small leaflets	c	
c	Leaflets 11–13, with many small ones alternating	Marsh Agrimony	995
c	Leaflets 5–9, with few intermediate ones	d	
d	Stems hirsute	Agrimony	992, 993, 996
d	Stems soft, pubescent	Agrimony	994
e	Leaflets incisely toothed, with small intermediate ones, ovate	Strict Geum	980
e	Leaflets 3–5 or some leaves 3–5 lobed only, not as above	Spring Geum	981
f	Leaves trifoliate	g	
f	Leaves ternate, etc.	h	
g	Leaflets entire, whole plant clammy	Polanisia	893-894
g	Leaflets serrate, straight veined, strawberry-like	Strawberry Potentilla	968
h	Leaves cleft in varying degree but not ordinarily compound	i	
h	Leaves ternately compound, at least in part or lobed on the same plant	o	
i	Leaves much cleft into narrow lobes, tall; stem hollow; flower large	Buttercup	782
i	Leaves not thus	j	

j	Leaves thick, fleshy, 3 lobed; stem hollow; petals small	Cursed Crowfoot	774
j	Leaves not thick or fleshy	k	
k	Leaves strictly divided by threes but not distinctly compound	l	
k	Leaves often seemingly 3–5 pinnate from root; low, early, small	Early Crowfoot	777
l	Plants tall and bristly; in swamps	Swamp Crowfoot	780
l	Plants low and spreading	m	
m	Leaves large, similar on root and stem; divisions large; flowers small	Hooked Crowfoot	776
m	Leaves small; plant creeping, rooting	Creeping Crowfoot	779
o	Plant with runners; soft, villous	Crowfoot	778
o	Plant without runners; bristly, hirsute	Rough Crowfoot	
p	Flowers 4 parted	q	
p	Flowers not 4 parted, generally 5 parted	x	
q	Plants merely puberulent to nearly smooth	r	
q	Plants pubescent to hirsute	t	
r	Leaves entire, sessile, lance, acute; flowers axillary; fruits cubical	Seed Box	1254
r	Leaves entire, sessile, lance to spatulate, blunt; fruits club shape	Dwarf Oenothera	1269
r	Leaves denticulate, often very sparingly, with some entire	s	
s	Leaves lance shaped, hairy margins; fruits smooth	Sundrops	1270
s	Leaves nearly linear, largely entire; fruits gray, hairy	Sundrops	1271
t	Petals very narrow; stem red, smooth to bristly	Cross Oenothera	1263
t	Petals broad	u	
u	Petals rhomboid; plant gray, hairy; of sandy places	Sand Oenothera	1267
u	Petals ovate; generally distributed	v	
v	Stem with bristly hairs from red enlarged bases, tall	Bristly Oenothera	1264
v	Stem with ordinary soft hairs, tall; leaves broad	w	
v	Stem with gray hairs, low; leaves narrow	Toothed Oenothera	1273
w	Flowers very large, 3″ or more, opening at night, rare	Great Flowered Oenothera	1266
w	Flowers medium, variable in size, opening at night, common	Evening Primrose	1265
x	Flowers very irregular, spurred; stems succulent	y	
x	Flowers regular	z	
y	Flowers pale yellow; foliage pale	Pale Touch-Me-Not	1164
y	Flowers orange spotted; foliage not pale	Touch-Me-Not	1163
z	Flowers tubular, salver form, with united petals	1	
z	Flowers spreading or open form with parts separate from each other	4	
1	Leaves broad, ribbed; flowers small, pale greenish yellow	Broad Leaved Gromwell	1445
1	Leaves narrow; flowers conspicuous	2	
2	Flowers pale yellow, very long tubed, fringed	Pale Puccoon	1448

2	Flowers orange	3	
3	Plants stiff, hairy; flowers showy, large	Rough Puccoon	1446
3	Plants soft, hairy; flowers not showy, small	Puccoon	1447
4	Leaves proportionately broad; stamens many	5	
4	Leaves proportionately narrow	8	
5	Plant tall with very large heart shaped leaves, velvety	Velvet Leaf	1181
5	Plant low or spreading; leaves medium or small	6	
6	Plant of very wet places; hollow stem; kidney-form leaved; clustered flowers	Marsh Marigold	800
6	Plant not as above	7	
7	Plant small, fleshy; leaves clustered at roots; flowers scapose; long runners	Seaside Crowfoot	772
7	Plant not thus; leaves heartshape below, divided above; flowers very small	Small Crowfoot	775
7	Plant bushy, spinescent; leaves broad lance, long stalked	Sida	1182
8	Stamens many; flowers large, expanded	9	
8	Stamens 5	10	
9	Flowers solitary at first; fruit light-colored	Rock Rose	1209
9	Flowers clustered at first; fruit dark	Rock Rose	1208
10	Flower parts all in fives; leaves thin, broad lance	Virginia Flax	1095
10	Flower parts all in fives; leaves narrow	11	
11	Leaves often paired; branches angular lined	Grooved Flax	1093
11	Leaves all alternate	12	
12	Leaves very small, linear or awl shaped; branches grooved	Sulcate Flax	1092
12	Leaves narrow lance, dull green, firm	Medium Flax	1094

IV. FLOWERS WITH MORE OR LESS RED IN VARYING TINTS—RED, CRIMSON, PINK, PURPLE

A	Leaves all from the root or underground portion of plant	D	
A	Leaves plainly from an aerial stem and alternate, one at each node	J	
A	Leaves plainly from an aerial stem and opposite, two at each node	m	
A	Leaves plainly from an aerial stem and whorled, three or more at each node	B	
B	Plants low; leaves in fours, linear; flowers odd shaped, in dense spikes	Cross Milkwort	1117
B	Plants tall	C	
C	Plants growing in or at margin of water, large, bushy	Water Willow	1249
C	Plants growing in damp, grassy places; flowers in terminal spike	Loosestrife	1250
D	Leaves hollow, pitcher-like; flowers large, nodding	Pitcher Plant	898
D	Leaves ordinary	E	
E	Leaves simple, in one piece, however much divided	F	
E	Leaves compound	g to first h inclusive	
F	Leaves very broad, kidney shaped, velvety	Wild Ginger	655

F	Leaves broad, deeply 3 lobed, persistent through winter; flowers early	G	
F	Leaves narrow, nearly round in sections; flowers scapose, in cymes	H	
G	Leaf lobes acute; flowers also white and bluish	Hepatica	790
G	Leaf lobes round; flowers also white and bluish	Hepatica	789
H	Anthers oblong	Talinum	759
H	Anthers spherical	Talinum	760
J	Plants growing in water or very wet muddy shores	K	
J	Plants not growing thus, though often in damp places	L	
K	Leaves elliptical, small, peltate, in deep water	Brasenia	769
K	Leaves finely dissected, bladder bearing	Bladderworts	1580–1586
L	Flowers 4 parted, regular; lower leaves sometimes opposite; calyx tube short or none	M	
L	Flowers 4 parted, regular; lower leaves sometimes opposite; calyx tube much prolonged	R	
L	Flowers 5 parted or not as above	T	
M	Flowers large, showy, in terminal racemes; leaves long, lance, sessile	Fire Weed	1258
M	Flowers small, usually pink; in moist places	N	
N	Plants nearly smooth below with decurrent leaf lines	O	
N	Plants usually hairy, without decurrent leaf lines	P	
O	Leaves short stalked, long lance; seed hairs cinnamon	Cinnamon Willow Herb	1261
O	Leaves sessile or short stalked, broad at base; seed hairs white	Northern Willow Herb	1262
P	Plants very hairy	Q	
P	Plants little hairy to nearly smooth; leaves green, narrow lance	Willow Herb	1905
Q	Plants densely gray velvety; leaves very narrow lance	Soft Willow Herb	1259
Q	Plants hoary hairy; leaves linear	Bog Willow Herb	1260
R	Plants tall, coarse, weedy, soft hairy or downy; flowers rose color; leaves broad	S	
R	Plants low, hoary to smooth; leaves very narrow	Scarlet Gaura	1276
S	Plants soft downy; flower spikes very long	Common Gaura	1274
S	Plants soft, long hairy; flower spikes dense, short	Small Flowered Gaura	1275
T	Flowers regular, the petals similar	V	
T	Flowers irregular, the petals dissimilar	h	
V	Leaves very succulent, numerous; flowers in dense clusters	Stonecrop Live-for-Ever	903
V	Leaves ordinary	W	
W	Leaves pinnately veined, heavy scented, entire	Hound's Tongue	1435
W	Leaves palmately veined	X	
X	Flowers with numerous stamens united in a column	Y	

X	Flowers with few, separate stamens	e	
Y	Flowers very large; tall swamp plants	Z	
Y	Flowers medium to small; not swamp plants	a	
Z	Leaves ovate, occasionally lobed, downy white beneath	Rose Swamp Mallow	1190
Z	Leaves 3 lobed, smooth	Military Swamp Mallow	1191
a	Leaves cleft deeply, as to the lower basal ones	b	
a	Leaves lobed or toothed, as to the lower basal ones; the upper sometimes cleft	c	
b	Leaf divisions many, narrow; flowers also white	Musk Mallow	1187
b	Leaf divisions few, 5–7, broad	Poppy Mallow	1189
c	Leaves triangular, the upper 3–5 cleft; flowers purple	Poppy Mallow	1188
c	Leaves round or not triangular	d	
d	Leaves sharply 5–7 lobed; flowers large	Wood Mallow	1186
d	Leaves roundly 5–7 lobed; flowers small	Crisped Mallow	1185
e	Plant perennial; leaves large; flowers medium pink	f	
e	Plant annual; leaves small; flowers small	Carolina Geranium	1103
f	Petals separate; stamens 10	Wild Geranium	1101
f	Petals united; stamens 5	Great Waterleaf	1433
g	Leaves interruptedly pinnate of many leaflets	Red Geum	983
g	Leaves pinnate of few leaflets; in swamps	Swamp Cinquefoil	972
g	Leaves ternately compound; flowers large with 5 spurs	Columbine	802
g	Leaves ternately compound; flowers small, without spurs	Herb Robert	1102
h	Flowers papilionaceous, like pea or bean flowers; leaves compound	Pea Family	1015–1090
h	Flowers not papilionaceous; leaves simple	i	
i	Petals three, serrate; plants low	j	
i	Petals 5 united; flowers scarlet in spike; tall swamp plants	Cardinal Flower	1652
j	Leaves oval; flowers large, 1–3, fringed	Fringed Polygala	1112
j	Leaves narrow; flowers small in spikes or racemes	k	
k	With cleistogamous (pale, inconspicuous) flowers in ground; flowers racemed	Common Polygala	1113
k	Without cleistogamous flowers	l	
l	Flowers in dense oblong spikes; plants slender; leaves linear	Tall Polygala	1115
l	Flowers in slender narrow spikes; leaves minute	Pink Polygala	1116
m	Flowers without petals, funnel form, inclosed in broad, leafy involucre; stems tumid jointed	n	
m	Flowers with petals, as a rule; not as above	q	
n	Leaves broad, oval or oblong; all petioled	Wild Four-o'Clock	723
n	Leaves sessile, narrow, lance to linear, occasionally oblong	o	
o	Leaves linear, thick, glaucous, elongate	Narrow Leaved Wild Four-o'Clock	726
o	Leaves not linear, thick, glaucous	p	
p	Glandular hirsute, especially at nodes; leaves lance	Hairy Wild Four-o'Clock	724

p	Not glandular hirsute; leaves oblong elongate; stem whitish	White Wild Four-o'Clock	725
q	Plants normally of wet places—marshes, swamps, pond margins	r	
q	Plants normally of dry places, with one exception	w	
r	Plants low, spreading or creeping; without petals	Water Purslane	1246
r	Plants erect, of considerable height	t	
t	Leaves broad, sessile, palmately 5–7 ribbed; flowers showy; petals 4; stem square	Meadow Beauty	1253
t	Leaves broad, sessile, palmately 5–7 ribbed; flowers showy; petals 5 or more; stem square, wing angled	Sabatia	1376
t	Leaves not thus	u	
u	Plants branching, narrow leaved; flowers small, axillary, single	Wheelwort	1247
u	Plants branching, narrow leaved; flowers small, clustered in axils	Scarlet Loosestrife	1248
u	Plants tall, downy; leaves often in threes; flowers showy in spikes	Spiked Loosestrife	1251
u	Plants not tall, smooth; flowers small, cymose	Marsh St. John's-Wort	1206
w	Flowers regular	x	
w	Flowers more or less irregular	2	
x	Flowers tubular, salver form, in terminal corymbs or panicles, showy; simple stemmed	y	
x	Flowers open, bellshaped; smooth branching; leaves broad; flowers in small cymes	1	
x	Flowers open wheel shaped, axillary, closing in cloudy weather	Poor Man's Weather Glass	1368
y	Very smooth; leaves lance linear; plants of moist open places	Smooth Phlox	1424
y	Hairy or roughish; leaves linear or nearly so; dry land places	z	
z	Plants only of sands; flowers pale, petals deeply cleft	Sand Phlox	1428
z	Otherwise; pink purple to rose red; petals entire	Red Phlox	1425
1	Petal lobes recurved when old; all cymes at one time	Dogbane	1389
1	Petal lobes not recurved when old; central cymes earlier	Dogbane	1390
2	Plants prostrate, spreading; leaves pinnatifid, hairy; flowers very small	Creeping Vervain	1458
2	Plants not thus	3	
3	Plants very viscid; flowers and leaves very small, very slender; leaves ovate	Cuphea	1252
3	Plants not at all viscid	4	
4	Flowers small, 2 lipped, in long slender spikes; deep woodland plant	Lopseed	1596
4	Not as above	5	
5	Flowers large, tubular, axillary, with united petals; irregularity not great	6	
5	Flowers smaller, in terminal, often clustered, spikes; stems angular; petals united	7	

6	Leaves broad, sessile; plants hirsute	Ruellia	1595
6	Leaves broad, petioled; plants nearly smooth	Smooth Ruellia	1594
7	Leaves deeply cleft or divided; flowers showy	Wild Verbena	1459
7	Leaves merely toothed	8	
8	Plants white downy; leaves ovate, strongly toothed; flowers striking	Strict Vervain	1456
8	Plants rough; leaves narrow, slightly toothed	Narrow Leaved Vervain	1452

V. FLOWERS BLUE OR VIOLET OR WITH THESE COLORS PREDOMINANT

A	Flowers apetalous, with 3 bracted involucre; also white and red	Hepaticas	789–790
A	Flowers not apetalous or not as above	B	
B	Petals separate from each other	C	
B	Petals united together	D	
C	Petals 4, irregular, the two upper spurred; leaves much cleft	Field Larkspur	804
C	Petals 5, regular; sepals, stamens, pistils also 5; leaves linear	Flax	1091
D	Flowers regular	J	
D	Flowers irregular	E	
E	Plants prostrate, creeping; leaves opposite; flowers pale; water margins	Fog-Fruit	1460
E	Plants erect, simple or branched; sap milky; flowers in bracted racemes or spikes	F	
F	Flowers about 1″ long, densely spicate, racemose	G	
F	Flowers ½″ or less in length, loosely racemose or spiked	H	
G	Nearly smooth or slightly hairy; leaves thin; plant tall	Great Lobelia	1653
G	Soft, pubescent; leaves thick; spike rather one sided	Downy Lobelia	1654
H	Leaves ovate to oblong or club form	I	
H	Leaves linear; stems low-angled; very wet places	Kalm's Lobelia	1656
I	Plant wand-like, slender; flowers in long slender spikes	Spiked Lobelia	1655
I	Plant bushy branched; pods inflated	Indian Tobacco	1657
J	Plants with milky juice; petals 5, mostly bell-form, except K1	K	
J	Plants not as above	P	
K	Corolla wheel-form	L	
K	Corolla bell-form	M	
L	Plants tall, of low woods; flowers large, conspicuous	Tall Bellflower	1647
L	Plants low, of open, sterile places; flowers not conspicuous	Venus's Looking Glass	1651
M	Plants weak, stems angular; leaves linear; flowers small, pale; marshes	N	
M	Plants not as above	O	
N	Flower peduncles strongly spreading; flowers almost or often white	Marsh Bellwort	1649

N	Flower peduncles strongly ascending; flowers pale blue	**Marsh Bellwort**	**1650**
O	Stem leaves mostly linear; basal leaves rarely present, round cordate	**Bluebell**	**1648**
O	Stem leaves ovate lance; basal leaves cordate ovate, long stalked	**Roadside Bluebell**	
P	Leaves alternate	**Y**	
P	Leaves opposite	**Q**	
Q	Plants trailing; leaves shining evergreen; flowers axillary	**Myrtle or Vinca**	**1388**
Q	Plants not as above	**R**	
R	Flowers 4 parted	**S**	
R	Flowers 5 parted	**U**	
S	Flowers large, fringed; plants smooth; damp places; late blooming	**T**	
S	Flowers small; plant small, delicate; very early blooming	**Bluets**	
T	Leaves broad, oblong ovate; fringe beautiful	**Great Fringed Gentian**	**1378**
T	Leaves narrow, lance linear; fringe scanty	**Lesser Fringed Gentian**	**1379**
U	Flowers almost or wholly closed in the throat or mouth	**V**	
U	Flowers open at all times	**W**	
V	Flowers pale blue with slightly open mouths; calyx lobes narrow, long	**Soapwort Gentian**	**1382**
V	Flowers deep blue with tightly closed mouth; calyx lobes broad, short	**Closed Gentian**	**1383**
W	Flowers slender tubed, salver form; very early blooming	**Blue or Wood Phlox**	**1426**
W	Flowers not thus; late blooming	**X**	
X	Flowers large, deep blue; long funnel form; leaves stiff, narrow lance	**Prairie Gentian**	**1381**
X	Flowers medium, about 5 in a cluster, pale; leaves ovate-lance, clasping, 3 ribbed	**Five Flowered Gentian**	**1380**
Y	Leaves pinnately compound; flowers bell-form in corymbs	**Jacob's Ladder**	**1430**
Y	Leaves simple	**Z**	
Z	Plants smooth, large; leaves large; flowers large, trumpet-form, clustered	**Virginia Cowslip**	**1443**
Z	Plants more or less roughened	**a**	
a	Plants delicate, of very wet places; soft hairy; flowers in racemes, small, with light "eyes"	**b**	
a	Plants rough, coarser, of dry places	**c**	
b	Calyx lobes much shorter than corolla tube	**Forget-Me-Not**	**1439**
b	Calyx lobes as long as the corolla tube	**Lax Forget-Me-Not**	**1440**
c	Flowers very small; plants bushy, low, rough; waste place weeds; fruit a bur	**Beggar's Lice**	**1438**
c	Flowers conspicuous; plants large	**d**	
d	Woodland plants; bristly; flowers in racemes that are long peduncled	**Wild Comfrey**	**1436**
d	Wasteland plants; bristly; flowers clustered in long panicle	**Bugloss**	**1450**

KEY TO THE TREES OF THE CHICAGO AREA (DICOTYLEDONS) IN SUMMER FOLIAGE

Note:—A Tree is a woody plant with a single trunk, normally, having a minimum height of 8 feet.

A	Leaves evergreen, with one exception, narrow, needle, awl or scale like	See Special Key	
A	Leaves ordinary, expanded, deciduous	B	
B	Leaves 2, occasionally 3, at a node, opposite	C	
B	Leaves one at each node, alternate	H	
C	Leaves simple, in one part	D	
C	Leaves compound, in several parts	F	
D	Leaves palmately veined and lobed	The Maples	
a	Twig bark grayish brown	b	
a	Twig bark brown or red	c	
b	Leaves hairy beneath, dark green	Black Maple	1158
b	Leaves not hairy beneath, light green	Sugar Maple	1157
c	Twig bark brown, leaves deeply 5 lobed	Silver Maple	1159
c	Twig bark red brown, leaves usually not deeply 3 lobed	Red Maple	1160
D	Leaves not lobed	E	
E	Leaves sharply serrate	a	
a	Leaves acuminate, with winged leaf stalks	Sweet Black Haw	1638
a	Leaves not acuminate, with naked leaf stalks	Black Haw	1639
a	Leaves finely serrate, twigs 4 angled	Wahoo	1152
E	Leaves entire	a	
a	Leaves pubescent; fruit red when ripe	Dogwood	1323
a	Leaves very rough, hairy; fruit white when ripe	Rough Leaved Dogwood	1330
F	Leaves palmately compound, of 5, occasionally 7, leaflets	Buckeye	1162
F	Leaves pinnately compound	G	
G	Leaves 3–5 parted, twig bark smooth, green or purple-brown	Box Elder	1161
G	Leaves 5–11 parted	a	
a	Leaves and twigs velvety	Red Ash	1377
a	Leaves and twigs smooth or nearly so	b	
b	Young twigs quadrangular	Blue Ash	1373
b	Young twigs round	c	
c	Leaflets sessile	Black Ash	1374
c	Leaflets stalked	d	
d	Leaflets green beneath, narrow	Green Ash	1372
d	Leaflets pale beneath, broad	White Ash	1370
H	Leaves simple	I	
H	Leaves compound	7	
I	Leaves with entire margins	J	
I	Leaves with toothed, lobed or incised margins	Q	
J	Leaves broad, heart shaped; fruit a pod	Red Bud	1022
J	Leaves not heart shaped; fruit not a pod	K	
K	Leaves large with broad v notched apex	Tulip Tree	809

K	Leaves not so featured	L	
L	Leaves with axillary spines, an escape from hedges	Osage Orange	644
L	Leaves without these spines	M	
M	Leaves aromatic, often 2 or 3 lobed on same shoot	Sassafras	818
M	Leaves not aromatic	N	
N	Leaves medium sized, 2 to 6″	O	
N	Leaves large, 6 to 12″, thin	Papaw	810
O	Leaves narrow, oblong, bristle tipped, thick	Shingle Oak	635
O	Leaves broader, not thus tipped	P	
P	Leaves thin; twigs greenish	Alternate Leaved Dogwood	1329
P	Leaves thick, dark, shiny; twigs not greenish	Black Gum	1331
Q	Leaf margin more or less lobed	R	
Q	Leaf margins toothed	U	
R	Leaves silvery white beneath	Silver Poplar	597
R	Leaves not thus	S	
S	Leaves rough, with milky juice, often simply toothed	Mulberry	645
S	Leaves not rough, without such juice	T	
T	Leaves large, palmately veined	Sycamore	920
T	Leaves often large, pinnately veined	a	
a	Lobes with rounded tips	b	
a	Lobes with bristle tips	c	
b	Leaves pale and smooth	White Oak	621
b	Leaves pale and densely puberulent beneath	Bur Oak	623
c	Leaves smooth above and beneath	d	
c	Leaves pubescent beneath, at least on veins	e	
d	Leaves large, sinuses shallow, many, ¼ width of leaf	Red Oak	629
d	Leaves small, sinuses deep, few, ⅓ width of leaf	Pin Oak	630
e	Axillary hair tufts rusty, conspicuous, leaves dull	Black Oak	633
e	Axillary tufts inconspicuous, leaves shiny, deep lobed	Jack Oak	632
U	Leaves with oblique bases	*	
U	Leaves without oblique bases	X	
*	Ovate or oblong, rough	V	
*	Rounded or broad, not rough above	W	
V	Primary veins prominent, straight	a	
a	Leaves larger, very rough on both surfaces	Red Elm	636
a	Leaves smaller, somewhat rough	White Elm	638
V	Primary veins curved; leaves very rough	Hackberry	640
W	Leaves straight veined, blunt toothed	Witch Hazel	1904
W	Leaves large, not straight veined, sharp toothed	Basswood	1180
X	Leaves dentate or coarse toothed	Y	
X	Leaves fine toothed	1	
Y	Leaves with flattened petioles, broad	Great Toothed Aspen	599
Y	Leaves without flattened petioles	Z	
Z	Broadest above middle, blunt or short pointed; broad	Swamp White Oak	624
Z	Broadest at or below middle, long pointed; usually narrow	Chestnut Oak	627

1	Leaves straight veined	2	
1	Leaves not straight veined	6	
2	Leaves minutely serrulate, broad, blunt apexed	Alder	618
2	Leaves with conspicuous marginal teeth	3	
3	Leaves sharply, simply serrate	4	
3	Leaves sharply and doubly serrate	5	
4	Leaves and twigs aromatic, like wintergreen	Sweet Birch	614
4	Twigs not aromatic; leaves yellow green	Beech	620
5	Leaves ovate, usually 3″ or less	a	
a	Twigs smooth, reddish brown; leaves dark green	Canoe Birch	616
a	Twigs smooth, brown to dull silver-gray; leaves yellow green	Yellow Birch	615
5	Leaves ovate-oblong, usually more than 3″	a	
a	Twigs dark shining brown; leaves yellow green	Iron Wood	612
a	Twigs red orange, with many pale lenticels; leaves dull green	Hornbeam	613
6	Twigs and small branches thorny or with stiff sharp branchlets	a	
a	Twigs with naked thorns	Hawthorns*	939–963
b	Leaves large (for hawthorns), somewhat lobed, sharply toothed, downy	Large Red Haw	949
b	Leaves smoll	c	
c	Ovate to elliptical, finely toothed; fruit dark red	Cockspur Thorn	940
c	Long, wedge shaped at base; fruit large, dull red or greenish, dotted	Dotted Thorn	941–942
a	Older twigs with stiff, sharp, often leaf-bearing branchlets	b	
b	Bruised bark strongly odorous; fruit shades of red	c	
c	Leaf stalks without glands	Wild Plum	1013
c	Leaf stalks with glands	Canada Plum	1009
b	Bruised bark not strongly odorous; fruit green, fragrant	Wild Crab	927, 928, 929
6	Twigs and young branches not spine bearing	a	
a	Bruised bark strongly odorous (bitter almond odor)	b	
b	Leaves taper pointed, oblong lanceolate	c	
c	Twigs bright red, often gray scurfy	Red Pin-Cherry	1006
c	Twigs brown	Black Cherry	1004
b	Leaves short pointed, oval	Choke Cherry	1005
a	Bruised bark not strongly odorous	b	
b	Leaves broad, width about length or greater	c	
c	Leaves very downy, especially beneath	Downy Poplar	599
c	Leaves essentially smooth	d	
d	Leaves truncate or heart shaped at base	e	
e	Large, deltoid, truncate, 5–7″	Cottonwood	602
e	Small, deltoid, truncate, 2–3″	Lombardy Poplar	603

*No attempt is made in this Key to separate *all* species of Chicago Area hawthorns.

e	Large, heart shaped, 3–5″	Balm of Gilead	601
d	Leaves mostly oval or rounded, without such base	f	
f	Leaves small, 1–3″, not fragrant	Aspen	598
f	Leaves 3–6″, long, very fragrant	Balsam Poplar	600
b	Leaves narrow, oblong to lanceolate	c	
c	Leaves downy or pubescent beneath	d	
c	Leaves smooth	e	
d	Leaves small, 2–3″, very pale beneath	Beaked Willow	593
d	Leaves larger, 3–4″, pale to woolly beneath	*	
*	Rounded at base	Apple	930
*	Heart shaped at base	Shad Berry	936
e	Green on both surfaces	f	
e	Very pale beneath	h	
f	Narrow, curved, acuminate, rounded at base	Black Willow	575
f	Very narrow, linear, lanceolate	Sand Bar Willow	582
f	Broader, 4–6″, slightly paler beneath	g	
g	Very long, acuminate, yellow veined	Shining Willow	577
g	Acuminate, green veined	Crack Willow	579
h	Oblong, small	Pussy Willow	588
h	Lance form, long, acuminate	Peach Willow	576
7	Leaflets with entire margins or simply wavy	8	
7	Leaflets with toothed margins	13	
8	Leaves even, pinnate	9	
8	Leaves odd, pinnate	10	
9	Small with numerous small leaflets, thorny	Honey Locust	1017
9	Large with larger leaflets	Coffee Tree	1016
10	Leaflets small, 1″, elliptic, prickle bearing	Locust	1049
10	Leaflets large, 2–4″, ovate to ovate-lanceolate	11	
11	Leaflets 11–41, usually with a few blunt teeth near base	Ailanthus	1111
11	Leaflets 7–21	12	
12	Leaf petiole winged; fruit red	Shining Sumac	1146
12	Leaf petioles not winged; fruit white	Poison Sumac	1147
13	Leaves with milky sap	14	
13	Leaves without milky sap	15	
14	Leaflets pale beneath; twigs smooth	Smooth Sumac	1145
14	Leaflets not pale beneath; twigs densely hairy	Staghorn Sumac	1144
15	Leaves smooth yellow green; leaflets 13–17	Mountain Ash	935
15	Leaves dark green, leaf stalks prickly, leaflets 5–11	Prickly Ash	1108
15	Leaves, 3-foliate	Hop Tree	1110
15	Leaves not as above	16	
16	Leaf stalks clammy and hairy	Butternut	605
16	Leaf stalks not clammy hairy	17	
17	Leaflets 13–23	Walnut	606
17	Leaflets 5–11	18	
18	Leaflets 5, the terminal very large	Shag-bark Hickory	607
18	Leaflets 5–7, usually straight	Pignut Hickory	608
18	Leaflets 7–11, usually curved	Bitter Nut Hickory	609

KEY TO THE SHRUBS OF THE CHICAGO AREA

	Shrubs with awl-shaped, evergreen leaves and blue berry-like fruit	A	
	Shrubs with ordinary leaves, deciduous or evergreen	B	
A	Shrub trailing extensively	Trailing Juniper	65
A	Low spreading, bushy shrubs	Dwarf Juniper	64
B	Leaves evergreen; small, low or creeping plants	C	
B	Leaves deciduous, various	H	
C	Leaves narrow, lanceolate to oblong	D	
C	Leaves larger, oblong, ovate or elliptic	E	
D	Pale beneath and with revolute margins	Andromeda	
D	Green beneath; plant slender, trailing	Cranberry	1355
E	Leaves elliptic, hairy	Trailing Arbutus	1343
E	Leaves small, oblong	F	
F	Leaves smooth, thick, shining	G	
F	Leaves rough, scurfy	Leather Leaf	1342
G	Erect, small plants with few leaves	Wintergreen	1344
G	Trailing extensively	Bearberry	1345
H	Plants with simple leaves	I	
H	Plants with compound leaves	22	
I	Leaves opposite, two at a node	J	
I	Leaves alternate, one at a node	S	
J	Leaves palmately veined or lobed	K	
J	Leaves pinnately veined	L	
K	Leaves mostly smooth, marginal flowers sterile, fruit red	Wild Snowball	1633
K	Leaves pubescent on both sides, no sterile flowers, fruit black	Dockmackie	1634
L	Leaves crenulate, ciliate, oval, acuminate; flowers yellow	Bush Honeysuckle	1623
L	Leaves crenulate; stem square	*	
	* Leaves acuminate	Strawberry Bush	1153
	* Leaves obtuse; stem creeping	Running Strawberry Bush	1154
L	Leaves entire	M	
M	Leaves in a whorl of about 4, ovate; plant low; flowers white	Bunchberry	1322
M	Leaves on leafy shoots	N	
N	Leaves pubescent to woolly beneath	O	
N	Leaves glabrate beneath, though often pale	Q	
O	Leaves woolly; shrub red twigged	Sand Dune Cornel	1326
O	Leaves silvery, stellate beneath	Canada Buffalo Berry	1245
O	Leaves not woolly beneath	P	
P	Leaves hairy beneath with brownish pubescence, narrow	Silky Cornel	1325
P	Leaves pubescent with pale hairs, large, round	Round Leaved Cornel	1324
Q	Leaves green beneath, small, strongly ciliate	Fly Honeysuckle	
Q	Leaves pale beneath	R	
R	Twigs red, swamp shrubs	Red Osier Cornel	1327
R	Twigs gray brown, thicket shrubs	Pigeonberry	1328

S	Leaves palmately veined	T	
S	Leaves pinnately veined	1	
T	Stems not armed with prickles	U	
T	Stems armed with prickles	V	
U	Leaves resinous dotted, 3–5 lobed; fruit black.	Black Currant	917
U	Leaves not resinous dotted, 3 lobed, bark shreddy	Nine Bark	921
V	Prickles on young shoots very numerous	Missouri Gooseberry	914
V	Prickles not thus, few or none	W	
W	Bark and leaf spines purple brown	Slender Gooseberry	915
W	Bark and leaf spines, pale	X	
X	Fruit prickly, dark colored	Rock Gooseberry	913
X	Fruit smooth, red purple	Wild Gooseberry	916
1	Leaves spicy, aromatic, oblong; flowers yellow.	Spice Bush	819
1	Leaves not aromatic	2	
2	Leaves densely woolly or scurfy beneath	3	
2	Leaves not thus	4	
3	Leaves very narrow, white, hairy above also	Hoary Willow	595
3	Leaves ovate; flowers pink to rose red	Hardhack	925
4	Leaves small, entire.	5	
4	Leaves crenulate or finely serrate	11	
4	Leaves serrate or crenate	20	
4	Leaves narrow, fragrant, pinnatifid	Sweet Fern	604
5	Leaves green on both sides	6	
5	Leaves pale to tomentose beneath	8	
6	Tall shrubs with narrow, oblong, very smooth leaves; red fruit	Mountain Holly.	1151
6	Low spreading shrubs with blue or black fruit	7	
7	Leaves oval, oblong, resinous dotted	Huckleberry.	1346
7	Leaves oblong, not resinous	Canada Blueberry	1349
8	Leaves pale beneath, smooth.	9	
8	Leaves white, tomentose beneath	Dwarf Willow	591
9	Leaves very small, narrow, lanceolate	Myrtle Willow	587
9	Leaves larger, oval to oblong.	10	
10	Twigs green brown, smooth	High Blueberry.	1351
10	Twigs yellow green, warty	Low Blueberry	1347
11	Leaves green both sides	12	
11	Leaves pale beneath	16	
12	Leaves comparatively short, oval to oblong.	13	
12	Leaves more elongate, ovate lance to lance.	14	
13	Twigs brown; fruit red.	Northern Holly	1150
13	Twigs green, warty; fruit blue	Dwarf Blueberry	1350
14	Twigs with gray bark; berry black	Buckthorn	1167
14	Twigs with greenish, yellowish, brownish bark; fruit early, a down	15	
15	Stipules persistent; leaves round to cordate at base	Heart Willow	583
15	Stipules deciduous; leaves acuminate at base	Petioled Willow.	589
16	Leaves pale but smooth beneath.	17	
16	Leaves pale and tomentose beneath, oblong	Prairie Willow	590
16	Leaves pale and silky hairy beneath.	Sand Willow.	586
17	Leaves short, oblong to ovate; fruit red.	Red Chokeberry	932
17	Leaves short, oblong to ovate; fruit black	Black Chokeberry	934

17	Leaves long, approaching lanceolate	18	
18	Twigs purplish	19	
18	Twigs olive brown; leaves smooth, very glaucous	Glaucous Willow	584
19	Leaves very silky when young, turning black, lanceolate	Silky Willow	592
19	Leaves smooth, oblong lance, bark very bitter	Purple Willow	596
20	Leaves broad, large, cordate, doubly serrate	Hazelnut	611
20	Leaves oval, acute at base	Low Buckthorn	1168
20	Leaves narrow, sharply serrate; flowers white; fruit dry	Meadowsweet	923
22	Leaves pinnately compound	23	
22	Leaves palmately 3–7 foliate	28	
23	Leaves with numerous small, narrow leaflets	24	
23	Leaves with few, larger, broad leaflets	25	
24	Whole plant silky gray	Lead Plant	1043
24	Plant nearly smooth	Great Lead Plant	1044
25	Foliage fragrant, leaflets 5–7	Sweet Briar	1000
25	Foliage not fragrant, leaflets 5–9	26	
26	Stems with few or no prickles	Smooth Low Rose	999
26	Stems with usually numerous prickles	27	
27	Leaflets finely serrate	Swamp Rose	1001
27	Leaflets coarsely serrate	Low Wild Rose	1003
28	Leaves white pubescent beneath	29	
28	Leaves green beneath	30	
29	Stem very bristly; leaves not glaucous; fruit red	Red Raspberry	984
29	Stem not bristly; leaves glaucous; fruit black	Black Raspberry	986
30	Plant trailing	31	
30	Plant not trailing; leaves 3–5 foliate	Blackberry	988
31	Stems strongly prickly; leaves 7 foliate	Dewberry	991
31	Stems bristly; leaves 3 foliate	Swamp Blackberry	990

KEY TO THE VINES OF THE CHICAGO AREA

	Vines climbing by aerial roots	Poison Ivy	1148
	Vines climbing by hooked prickles; leaves 3 parted	Illinois Rose	997
	Vines climbing by twining	A	
	Vines climbing by tendrils	R	
A	Leafless, yellowish parasitic vines with clustered small white flowers	Dodders. See Special Key	1418–1423
A	Leafy plants	B	
B	Woody perennials	C	
B	Herbaceous annuals or perennials	F	
C	Right-handed twiners, with hollow stems	D	
C	Left-handed twiners	E	
D	Leaves oblong-oval, pale beneath; flowers red; fruit red; plants slender	Red Honeysuckle	1627
D	Leaves oval or round, upper circular, united; plants heavy, bushy; flowers yellow	Yellow Honeysuckle	1628
E	Older stems gray	Bittersweet	1155
E	Older stems brown	Moonseed	811

F	Right-handed twiners	G	
F	Left-handed twiners	H	
G	Leaves parallel-ribbed, cordate	Wild Yam	535
G	Leaves palmate veined, lobed, rough	Hops	643
H	Low, 2–4′, slender; leaves 3 parted	I	
H	Taller, 3–15′ or more	J	
I	Leaflets angled or lobed	Wild Bean	1086
I	Leaflets entire	Wild Bean	1087
J	Leaves pinnately 3–7 foliate	Ground Nut	1084
J	Leaves 3 foliate	K	
J	Leaves simple	L	
K	Stems brown, hairy	Wild Peanut	1090
K	Stems pale, pubescent	Wild Peanut	1089
L	Leaves with sheathing stipules	M	
L	Leaves without sheathing stipules	P	
M	Leaves narrow, arrow-shaped, small	Black Bindweed	684
M	Leaves broad, elongate, cordate, larger	N	
N	Stems reddish	Fringed Bindweed	686
N	Stems greenish	O	
O	Leaves up to 6½″, punctate	Tall Climbing Bindweed	685
O	Leaves up to 2½″	Copse Bindweed	687
P	Leaves triangular, hastate	Wild Morning Glory	1415
P	Leaves 3 lobed	Ivy Morning Glory	1410
P	Leaves cordate	Q	
Q	Stem retrorse, hairy	Morning Glory	1411
Q	Stems smooth or nearly so	Wild Potato Vine	1412
R	Low, often barely climbing	S	
R	Tall climbing plants	Z	
S	Leaflets 18 or more	Cow Vetch	1076
S	Leaflets 18 or less	T	
T	Leaflets generally more than 8	U	
T	Leaflets generally less than 8	X	
U	Plants smooth or nearly so	V	
U	Plants usually hairy	W	
V	Stipules narrow, entire; flowers pale, many	Carolina Vetch	1077
V	Stipules broad, foliaceous, toothed; flowers dark	American Vetch	1078
W	Leaflets broad, ovate	Showy Wood Vetch	1082
W	Leaflets narrow, oblong to linear	Hairy Vetch	1075
X	Leaflets broad, oval or ovate	Y	
X	Leaflets narrow, lanceolate to linear, oblong	Marsh Vetch	1080
Y	Whole plant pale; flowers cream white	Pale Vetch	1083
Y	Whole plant ordinary green; flowers blue	Marsh Vetch	1081
Z	Plants herbaceous	1	
Z	Plants woody	3	
1	Leaves parallel-ribbed; flowers green	Carrion Flower	528
1	Leaves palmate-veined, coarse	2	
2	Stem angled, sticky, pubescent	Star Cucumber	1645
2	Stem angled, smooth	Wild Cucumber	1646
3	Leaves parallel ribbed, plants prickly	4	
3	Leaves palmately lobed or divided	5	
4	Leaves round or orbicular, 5 nerved	Green Brier	531–532
4	Leaves ovate, 7 nerved	Green Brier	534
5	Leaves 5 divided; tendrils with discs	Virginia Creeper	1172

5	Leaves palmately veined	6	
6	Leaves pale, woolly beneath	7	
6	Leaves not woolly beneath	9	
7	Wool rusty	Fox Grape	1173
7	Wool white	8	
8	Leaves not lobed or but slightly so	Gray Grape	1176
8	Leaves lobed, generally deeply	Summer Grape	1174
9	Leaves pale beneath	Blue Grape	1175
9	Leaves green beneath	10	
10	Leaf sinus broad, flat	River Grape	1177
10	Leaf sinus narrow, v shape	Frost Grape	1179



WOODRUFF

LIZARD'S TAIL (*Saururus*)

SUB-CLASS DYCOTYLEDONS

Seed with two cotyledons—vascular bundles concentric. Leaves mostly net veined and flowers mostly 4 or 5-merous.

Seventy-eight per cent of our North American plants are in this group. Seventy per cent of the Area plants belong here, or about 1,333 species.

There are 166 families in North America north of Mexico and 89 families in our Area.

APETALAE OR POLYPETALAE

ORDER 1—CASUARINALES

SHE-OAKS.

Tropical and southern hemisphere plants.

ORDER 2—PIPERALES

PEPPERS.

One family, the Lizard's Tails of our Area.

SAURURACEAE.

LIZARD'S TAILS.

Marsh herbs with ribbed leaves and small incomplete flowers in spikes.

574. SAURURUS CERNUUS L.

LIZARD'S TAILS.

Marshes north of Port Chester, Ind., abundant. (Cowles, Umbach, Pepoon) Babcock reports it as rare at Glencoe and Evanston. Very common in southwest Michigan.

ORDER 3—SALICALES

WILLOWS—POPLARS.

One family, the Willows, including many temperate region shrubs and trees. Flowers in aments; bark bitter.

SALICACEAE.

WILLOWS, ETC.

Shrubs and trees, dioecious, with flowers in aments, without perianth. The pistillate flowered plants are much the commoner.

200 species of cool regions. There are 31 in our Area.

575a. SALIX NIGRA Marsh.

BLACK WILLOW.

Along all streams and in low grounds generally. Our largest species. The common river bank willow.

575b. SALIX NIGRA FALCATA (Pursh.) Torr.

BLACK WILLOW.

Similar situations, not common.

576. SALIX AMYGDALOIDES Anders.

PEACH-LEAVED WILLOW.

Very common in moist situations, but little smaller than S. nigra. Abundant in the Dune region.

577. SALIX LUCIDA Muhl.

SHINING WILLOW.

Borders of streams, low swales and along ditches, common.

578. SALIX SERISSIMA (Bailey) Fernald.

AUTUMN WILLOW.

Found sparingly in the southeastern region, commonly confused with the preceding and seemingly overlooked by collectors until recently.

579. SALIX FRAGILIS L.

CRACK WILLOW.

A common escape from cultivation along roads and fences. A common street willow.

The branchlets break at base with slight pressure and falling often embed the broken ends in mud, with good chance of growing.

580. SALIX ALBA L.

WHITE WILLOW.

Common in cultivation and possibly occasionally naturalized.

581. SALIX ALBA VITELLINA (L.) Koch.

YELLOW WILLOW.

Wherever the variety is planted it is prone to become established spontaneously, the rooting of wind-broken limbs being blown into muddy places. The same method is found in the two preceding species.

582. SALIX LONGIFOLIA Muhl. S. interior Rowlee.

SAND BAR WILLOW.

Abundant in all moist sandy flats, throughout. Particularly common on sand washes along streams, forming dense thickets.

Forms almost impenetrable jungles on the old sand bars of large rivers.

Common in vacant low-lying lots of Chicago.

The common "spontaneous" willow of railway embankments.

583. SALIX CORDATA Muhl.

HEART-LEAVED WILLOW.

Common on low grounds, particularly near streams.

A form, in the collection of C. P. Murray of Whiting, Ind., has the leaves broadly lanceolate, sharply serrate, retaining the hairiness on the midrib beneath till very late in the season; stipules ovate, capsules about two inches long.

Possibly a hybrid cordata x adenophylla. (Bebb)

We have not been able to locate this interesting form, and have only the herbarium specimen to examine. As both cordata and adenophylla grow near Whiting, a hybrid form is likely to occur and should be looked for. (H. and R.)

There are in all probability many hybrid forms among our Willows and these ought to be carefully looked for and records made.

Hybrids ought to be searched for, particularly where several species grow near each other in confined areas, as marsh or swamp lands surrounded by woodland elevations.

584. SALIX GLAUCOPHYLLA Bebb.

SMOOTH WILLOW.

Abundant in moist soil near Lake Michigan.

585. SALIX GLAUCOPHYLLA BREVIFOLIA Bebb.

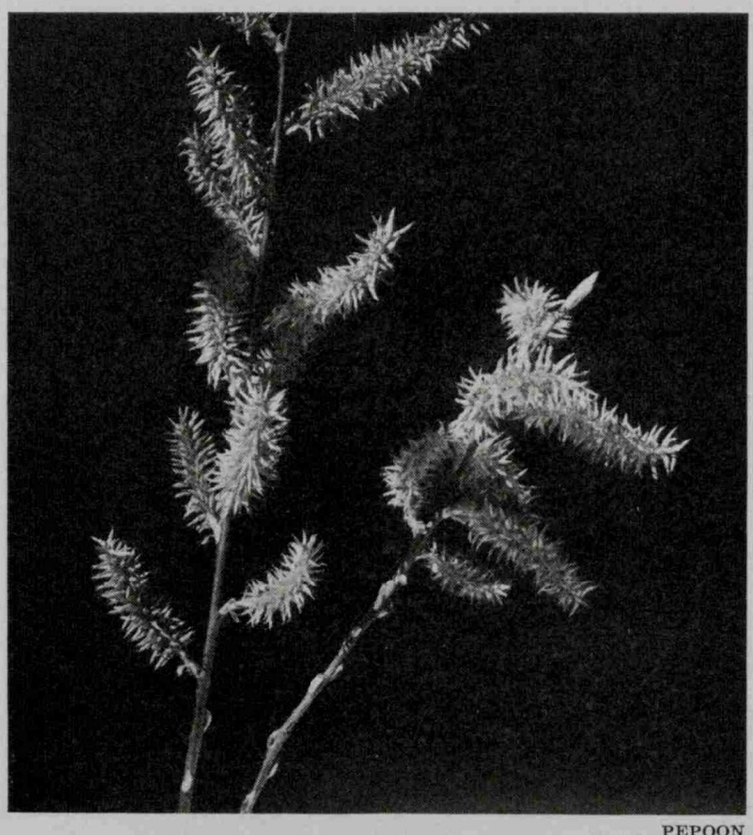
SHORT-LEAVED WILLOW.

Clarke, Ind., in moist sandy soil. (Umbach, 1909)



POSS

THE BLOSSOMS OF A WILLOW
Staminate *Salix glaucophylla*



PEPOON

THE BLOSSOMS OF A WILLOW
Pistillate *Salix discolor*

586. SALIX SYRTICOLA Fernald. S. adenophylla Hook.

DUNE WILLOW.

Beach Dunes, abundant and occasionally, at Dune Park, a mile from the lake. Usually growing on the shore dunes.

As it is a plant of stout growth, it is enabled to withstand the strong winds of the lake regions and, rooting deeply, it not only becomes firmly fixed in the soil but also tends to arrest the influence of the winds that constantly shift the sands of its habitat. It is often found upon the sand dunes, in the southeastern part of our district, facing the lake, and holding the sands in position until a firm growth of grass further protects the loose soil from the ravages of the storms. (H. and R.)

587. SALIX PEDICELLARIS Pursh. S. myrtilloides Man. Ed. 6.

MYRTLE WILLOW. BOG WILLOW.

Bogs southeast, very common. A dainty species, easily overlooked. The ♀ plants are particularly beautiful in bloom, on account of the red color of the aments.

588. SALIX DISCOLOR Muhl.

PUSSY WILLOW.

Everywhere in moist soil. The common "pussy" willow of the Area. Attains a diameter of ten inches and a height of twenty-five feet. Our earliest blooming species.

589. SALIX PETIOLARIS Sm.

PETIOLED WILLOW.

Low grounds generally overlooked. Nowhere common.

Prof. Dudley, of Cornell University, has found without exception, in testing a large number of cases, that the twigs do not disarticulate at the base, while the twigs of S. sericea, which it closely resembles in the earliest stages of development of the staminate plants, are brittle. (Cayuga Flora, p. 89.)

590. SALIX HUMILIS Marsh.

PRAIRIE WILLOW.

Original prairies, especially along fences, not frequent. Grows in large spreading clusters or dense low clumps.

This species and the next one are commonly confused although very distinct in appearance.

591. SALIX TRISTIS Ait.

DWARF WILLOW.

Prairies, abundant. Also on dry sand knolls southeast, and sand ridges north.

The yellowish tint of the bark will to a great extent prevent confusing this plant with the last, in which the bark is grayish.

The staminate plants, when in bloom, are very pretty.

592. SALIX SERICEA Marsh.

SILKY WILLOW.

Along streams and slough borders; frequent near Pine and Clarke, Ind.

South of Naperville, Ill.

Along the north branch of the Chicago River.

593. SALIX ROSTRATA Rich. S. Bebbiana Sarg.

BEAKED WILLOW. BEBB'S WILLOW.

Frequent throughout the district, a very distinct and beautiful form.

594. SALIX COACTILIS Fernald.

FERNALD'S SILVER WILLOW.

A number of clumps along the Du Page River north of Naperville. (Determined by Prof. Fernald) A difficult distribution case, 1000 miles from its home in the Northeastern States.

595. SALIX CANDIDA Flugge.

HOARY WILLOW. SAGE WILLOW.

Cold boggy soils, local, but rather common southeast. Found in practically all "quaking" bogs. An interesting species, a far southern outpost here. Hybrids are frequent, especially with S. petiolaris.

596. SALIX PURPUREA L.

PURPLE WILLOW.

Ditches, in cultivated regions, occasional, easily recognized by its sub-opposite branchlets and leaves. Seems to be increasing in numbers. Becoming common (1926) particularly northwest of Chicago.

597. POPULUS ALBA L.

ABELE POPLAR. WHITE POPLAR. SILVER POPLAR.

Roadsides, common near dwellings, forming thickets from root shoots.

598. POPULUS TREMULOIDES Michx.

ASPEN POPLAR. QUAKING-ASP.

Moist woods, common. Very abundant as an introduced tree in cut-off timber.

1906.* POPULUS GRANDIDENTATA Michx.

SILVER POPLAR. GREAT TOOTHED ASPEN.

Dry woods, occasional. Much less common than the preceding. A larger tree often of economic value for timbers. Worthy of cultivation.

599. POPULUS HETEROPHYLLA L.

DOWNY POPLAR.

In a swamp near Port Chester, Porter Co., Ind., are a number of trees, the largest 8 inches in diameter and 30 feet high. The ground is an old lake ridge, associated with the aspen and large-toothed aspen. (Pepoon, Cowles, Schontz, Umbach)

Two specimens, one on dune south of Miller, Ind., and one near Pine, Ind. (Gault) A notable extension of the species of some 400 miles northward. As late as 1918 the trees above noted were noticeably declining in vigor and some were almost dead. The local habitat will soon be deserted by this interesting species.

600. POPULUS BALSAMIFERA L.

BALSAM POPLAR.

Common along the lake shore in the northern part of the Area. A number of very large trees originally grew at Edgewater.

Thorn Creek, East Gary. Chicago Heights. Shore of Lake Michigan at Windsor Park.

Largely exterminated on account of building reasons.

601. POPULUS CANDICANS Ait. P. balsamifera var. Gray.

BALM-OF-GILEAD.

Near Lake Shore from Montrose Blvd. north. Not infrequent along the low shore Dunes. Also found near the shore southeast.

* Serial number and citation were omitted.

602. POPULUS DELTOIDES Marsh. P. monilifera Ait.

COTTON-WOOD.

Generally distributed. Many very large trees are scattered through the farm lands, presumably planted but perhaps wind-sown.

The "Carolina poplar" of the streets is a staminate southern form or possibly a distinct species.

This species forms "zones" at high-water mark on many small glacial lakes.

Grows abundantly in the shifting dunes, having the power of root growth from buried branches.

603. POPULUS NIGRA ITALICA Du Roi.

LOMBARDY POPLAR.

About abandoned buildings and along roads, occasional.

Originally abundant near Lake Michigan for one-fourth mile north of Wilson Ave. Miller, Ind.

ORDER 4—MYRICALES

SWEET GALES.

One Family, the Bayberry. Shrubs, with imperfect flowers in scaly catkins. Leaves resinous dotted.

MYRICACEAE.

SWEET GALES.

Shrubs with imperfect flowers and resinous dotted, often fragrant leaves and the fruit drupe-like.

35 species, widely distributed, 1 within our limits.

604. MYRICA ASPLENIFOLIA L. Comptonia Ait.

SWEET FERN.

Sand soils, Miller, Ind., and Dune Park. Very local. (Umbach)

Less frequent north. (H. and R.)

In a 1915 trip along the east coast of Lake Michigan to Traverse City the first station seen in the north-bound journey was near Pentwater, 150 miles north of the Indiana locality.

ORDER 5—LEITNERIALES

One family, the Cork-wood, of warm temperate and tropical America, distinguished for the possession of the lightest known wood.

ORDER 6—BALANOPSIDALES

AUSTRALIAN.

ORDER 7—JUGLANDALES

Two Families, the Pterocarps and the Walnuts, the latter only with us. Trees with characters given under Family. An ancient group having many representatives in Cretaceous and Pleistocene times.

In the latest works on classification the walnuts, willows, oaks, birches, etc., are moved far up in rank.

JUGLANDACEAE.

WALNUTS. HICKORIES.

Trees with pinnately compound leaves, imperfect, monoecious flowers and the fruit a dry drupe.

35 species of warm temperate regions, 6 in our area.

605. JUGLANS CINEREA L.

BUTTERNUT. WHITE WALNUT.

Moist rich woods, particularly along streams, also in depressions along the Dunes, southeast.

The best specimens are to be found along the Des Plaines valley from Riverside north. Common along the north branch of the Chicago River and in the Niles woods.

606. JUGLANS NIGRA L.

BLACK WALNUT.

Common along the Des Plaines and occasional north. Abundant along the Du Page and bordering woods. Rare in the sand regions. At New Lenox, abundant in 1921, being converted into railroad ties at $1.35 each.

607. CARYA OVATA (Mill.) Koch. Hicoria Raf. C. alba Nutt. HICORIA is the logical name.

SHELL-BARK HICKORY. SHAG-BARK HICKORY.

Dry soils, abundant north and west, occasional eastward.

Usually a sign of clay sub-soil. Very variable in its nut characters, not reproducing "true" from seed. Selection would produce valuable commercial nuts. The slowest growing of all our forest trees, about 16 inches in diameter in a century.

608. CARYA GLABRA (Mill.) Spach. C. porcina Nutt.

PIGNUT.

Moist rich soils, occasional throughout. Babcock says, "Winnetka, north and west, frequent."

Prof. Hill has diligently searched in the Babcock localities and has not found it, and queries, "Does this occur in our limits?"

C. glabra villosa (Sarg.) Rob. is found near Michigan City and northeastward into Michigan.

Genuine Glabra is found along the Glenwood beach at Waukegan. (Pepoon, Gates)

609. CARYA CORDIFORMIS (Wang.) Koch. C. amara Nutt. Hicoria minima Brit.

BITTER-NUT. YELLOW-BUD HICKORY.

Prof. Hill's observations show that this is the common bitter hickory throughout our region, and that C. glabra is very rare or actually absent.

Common west. (Gault, Umbach) Evanston and north. Niles woods. Bowmanville. The winter buds are long, curved and yellow, entirely unlike those of C. glabra, which are ovate and brownish and approaching those of the Shag-bark in appearance.

610. CARYA MICROCARPA Nutt. C. glabra odorata Sarg.

SWEET PIGNUT.

Becoming frequent at eastern limits of our region. Very abundant in southwest counties of Michigan where in many places it is the only species present. The young fruit is very fragrant. Seeds very sweet but exceedingly difficult to extract.

ORDER 8—FAGALES

Two Families, the Birches and the Beeches.

Mostly trees with imperfect flowers, one or both kinds in aments.

BETULACEAE.

BIRCHES.

Trees and shrubs, monoecious, the sterile in catkins, the fruit a one-celled and one-seeded nut, in short rigid aments.

75 species of northern regions, 7 in our district.

611. CORYLUS AMERICANA Walt.

HAZELNUT.

Thickets, common throughout, attaining a diameter of 2–3 inches in very favored locations and a height of 15 feet.

612. OSTRYA VIRGINIANA (Mill.) Koch.

IRON WOOD. HOP HORNBEAM.

Dry woods, along the Des Plaines and the north shore ravines. Common in the Dune region southeast. Trees 18 inches in diameter are occasional.

613. CARPINUS CAROLINIANA Walt.

HORNBEAM. BLUE BEECH. WATER BEECH.

Moist woods, throughout, common. Easily recognized by its fluted trunks of gray. Mistaken at times for the beech, but is a much smaller tree.

614. BETULA LENTA L.

CHERRY BIRCH. SWEET BIRCH.

Rich moist woods southeast of Miller, Ind., to Chesterton. A few specimens in a tamarack swamp two miles from Miller on the border of the Little Calumet valley. In the tamarack swamp at Mineral Springs it is common.



PEPOON

A MIDSUMMER SCENE IN A MIXED FOREST; A GREAT BEECH IN THE MIDDLE GROUND

615. BETULA LUTEA Michx.

YELLOW BIRCH.

Dune region in the tamarack swamps. Infrequent toward the eastern margin of our Area. (Hill, Cowles)

616. BETULA ALBA L. Var. papyrifera (Marsh.) Spach. B. papyrifera in part.

CANOE BIRCH. PAPER BIRCH.

Abundant at Rogers Park, also occasional all through the Dune region. The numerous specimens at Rogers Park are being rapidly killed by sewers and gas.

A colony one-half mile north of Riverside, apparently indigenous, but may have been introduced.

Called in H. and R. "B. populifolia."

Probably the type "alba" and the varieties (?) "papyrifera" and "cordifolia" are all present.

Prof. Hill's notes on Pine, Ind., trees would indicate this.

He reports the following forms from Pine Station, Ind.:—

(a) Leaves abrupt or wedge-shaped at base, short pointed.
(b) Leaves heart-shaped at the base, somewhat pointed.
(c) Leaves abrupt or rounded at the base, long pointed.

The trees were small, ten to twenty feet high; bark white, except in the youngest trees; leaves on young shoots large and hairy.

617. BETULA PUMILA L.

BOG BIRCH.

Bogs southeast and on the Waukegan flats, very common.

618. ALNUS INCANA (L.) Moench.

ALDER.

Borders of sloughs and streams southeast, common.

Also on moor north of Waukegan, very rare here.

Babcock's "A. serrulata, Edgemoore, Ind., Boltwood" is probably a transitional form of A. incana. (See Gray, 7 Ed., p. 337.)

619. ALNUS VULGARIS Hill. A. glutinosa L.

EUROPEAN ALDER.

A thriving colony on the Du Page River, in Section 35, Milton Township. (Gault)

FAGACEAE.

BEECH. OAK.

Monoecious trees and shrubs with the sterile flowers in catkins, the fruit a one-celled and one-seeded nut.

375 species, widely distributed, 15 in our region.

620. FAGUS GRANDIFOLIA Ehrh. F. ferruginea Ait. F. americana Sw.

BEECH.

A clump in the center of a wood one mile northeast of Edgebrook (Pepoon, Gates) and others in the ravines at Fort Sheridan and Highwood. The Edgebrook specimens are 16 inches in diameter and 60 feet tall, associated with the red elm, red oak, and black cherry. At present date (1926), wood cut over and clump lost. Presumably Indian planted.

From Chesterton east and south becomes a common forest tree. The beech woods of southwest Michigan are of maximum vigor.

621. QUERCUS ALBA L.

WHITE OAK.

Barren or poor soils, most abundant north, near the lake. Common everywhere in suitable soil.

622. QUERCUS STELLATA Wang. Q. obtusiloba Michx.

POST, ROUGH, OR BOX WHITE OAK. IRON OAK. TURKEY OAK.

Chiefly in sandy soil, south, rare. May. (Babcock)

Evanston. Windsor. Whiting, Ind. A single tree in each of these localities. (R. and H.)

Late collectors do not find the species. Prof. Hill says, "Never found it."

The author has never seen the oak in this region but is well acquainted with it from Kentucky regions. Does not occur here.

623. QUERCUS MACROCARPA Michx.

BUR OAK.

Rich soils, especially a feature of the ancient Lake Beaches. Most abundant southwest and north.

The acorns of this oak are exceedingly variable in size and fringe of cups, as are the leaves. Possible hybrids occur with the following species.

624. QUERCUS BICOLOR Willd. Q. platanoides Sud.

SWAMP WHITE OAK.

Abundant on moist flats throughout the district.

The acorns, used by European emigrants as a food material, are sweet when frost touched. The same is true of the bur oak acorns. Dried and ground into flour for cakes and bread.

Evidence of hybrids with the preceding species accumulates. In many specimens there is no evidence of "white hairy beneath" character.

625. QUERCUS BICOLOR X ALBA.

WHITE X SWAMP WHITE HYBRID.

A single tree at Highland Park. The acorns as a whole resemble bicolor; the leaves are very variable, many approaching alba. Prof. Groves of Oberlin College called the attention of Prof. Hill to the tree. (1905)

626. QUERCUS MICHAUXII Nutt.

COW OAK.

Found on the Des Plaines bottoms, especially near Romeo, common locally. Possibly, according to Trelease, a broad-leaved form of the next species.

627. QUERCUS MUHLENBERGII Engelm. Q. acuminata Houba.

Rare and local. West side Wolf Lake, near the north end, in Lake County, Ind. (Hill)

Palos Park, near drainage canal. At Mount Forest, near the canal, frequent. Many typical trees here.

628. QUERCUS MACROCARPA X MUHLENBERGII Sarg.

BUR X CHESTNUT OAK HYBRID.

A single tree in the midst of the Wolf Lake Muhlenbergii grove. Identified by Prof. Sargent.

629. QUERCUS RUBRA L. The late correct name (Trelease) is Q. maxima Ashe.

RED OAK.

Rich woods, throughout, common.

630. QUERCUS PALUSTRIS Moench.

WATER OAK. PIN OAK.

Low woods along Chicago and Des Plaines rivers, frequent. Very fine specimens in the Bowmanville woods.

Very common in the Edgebrook woods.

The acorns are the smallest of any of our oaks.

631. QUERCUS COCCINEA Moench.

SCARLET OAK.

Dry woods north and west, common. Supplanted by the black oak in sandy soils.

West Pullman, in woods.

The "almost certainty" is that this species is not found at all in our Area but what has been called so is "Q. ellipsoidalis." (Trelease)

632. QUERCUS ELLIPSOIDALIS E. J. Hill.

HILL'S BLACK OAK. PIN OAK. BLACK JACK OAK.

Common near Calumet River; particularly abundant near West Pullman. (Hill) Along Thorn Creek south of Thornton. Hammond. East Chicago.

Throughout northern Illinois this species is common. Found as far west as the Mississippi River and northeastern Iowa, where it is always called pin oak or black jack oak.

633. QUERCUS VELUTINA Lam. Q. tinctoria Bart. Q. tinctoria A. DC.

BLACK OAK.

The abundant oak in Chicago, on all sandy soils, rarely attaining a large size. Commonly this and the last species are confused but the yellow inner bark is distinguishing.

A tree at Beach on Waukegan Moor, about 12 feet high, is evidently a partly sand-buried specimen and has the acorns of a small type red oak, the shallow cup has the scales of a black oak, the acorn of Hill's oak, the leaves are indifferently black or Hill's. I suggest that it is a cross between the two. (Dr. Trelease thinks it is possibly Quercus velutina x ellipsoidalis.)

Q. ellipsoidalis is common one mile west. The oaks of the Moorland are mostly black oak, with some white and bur oaks intermingled.

634. QUERCUS IMBRICARIA X VELUTINA.

PIN X BLACK OAK HYBRID.

Groves along Flag Creek, about one mile northwest of Willow Springs.

Some of the leaves were almost like those of Q. imbricaria, but the larger number were lobed, but less deeply than in typical velutina; leaves slightly pubescent on the under side. All acorns gathered from this form were either typical fruits of imbricaria or of Q. velutina but with pubescent, yellowish, squarrose scales. Q. macrocarpa was the only other species found in this immediate vicinity. (Hill)

635. QUERCUS IMBRICARIA Michx.

LAUREL OAK. SHINGLE OAK. PIN OAK.

Found at the Sag, Willow Springs (common here one mile north), and south and west. Many occur south of Naperville. (Umbach) Abundant at New Lenox.

Hybridizes with Q. velutina at Willow Springs station. (Hill)

Prof. Hill says, "The oaks in order of frequency are: velutina (?), macrocarpa, alba, rubra, coccinea (?), bicolor, palustris, ellipsoidalis, imbricaria, muhlenbergii."

The queries are the author's.

ORDER 9—URTICALES

Three Families, the Elm, Mulberry, and Nettle, often combined, as in this catalog, into one, the Nettle Family.

URTICACEAE.

NETTLES.

Plants of various aspects, mostly imperfect flowers (except elms) with one-celled ovaries and one-seeded fruit. Leaves stipulate. Commonly with a tough, fibrous bast or inner bast or inner bark.

Mostly tropical; 475 species with 17 in our district.

NOTE:—Elms, Mulberries, and Osage are segregated by some late works. (See Britton & Brown. Ed. 2.)

636. ULMUS FULVA Michx.

RED ELM. SLIPPERY ELM.

Rich woods, north and west; most common near the Des Plaines River.

Frequent in Niles woods. Common at Edgebrook.

Trees are often more or less stripped of their bark which is used medicinally.

637. ULMUS CAMPESTRIS L.

ENGLISH ELM.

Seedlings are occasional, near cultivated trees. Easily established.

Especially about nurseries, as originally at Bowmanville, adjacent to the Peterson Nursery.

638. ULMUS AMERICANA L.

WHITE ELM. AMERICAN ELM.

Common in all moist situations, particularly fine trees on the Des Plaines River. The famous "Indian Tree" west of Wilmette was a huge hollow elm some six feet in diameter.

639. ULMUS RACEMOSA Thomas.

CORK ELM. ROCK ELM.

Romeo Island, in the Des Plaines River, rare. (Hill, Umbach, Johnson)

A conspicuously marked tree with its cork ridged branches, its fine large leaves and its broad winged fruit.

640. CELTIS OCCIDENTALIS L.

HACKBERRY.

Common near the Des Plaines River, not infrequent elsewhere. At Des Plaines in the Northwest Park is a specimen 32 inches in diameter, the largest specimen recorded in our area.

Common at Edgebrook along the Chicago River. Some very fine specimens here.

641. CELTIS OCCIDENTALIS PUMILA Muhl.

DWARF HACKBERRY.

Dry sandy knolls north of Miller, Ind. (Umbach, Pepoon) Rare or overlooked.

Common north of Long Lake, between Miller and Dune Park.

A shrub rarely more than five to seven feet in height and yet usually copiously fruit bearing. A curious example of the effect of soil and habitat to thus dwarf a stately tree.

642. CANNABIS SATIVA L.

HEMP.

Vacant lots and streets, locally common, particularly in Chicago.

Abundant on flood plains of streams, occasionally cultivated in Cook and Du Page counties.

643. HUMULUS LUPULUS L.

HOP.

Moist soils occasional and widely distributed. Nowhere common. Probably often a cultivated escape.

One of our two or three right-handed twiners.

644. MACLURA POMIFERA (Raf.) Schneider. Toxylon Raf. M. aurantiaca Nutt.

OSAGE ORANGE. BOIS D'ARC. HEDGE APPLE.

Commonly introduced along fences and spreading from the roots, near hedges. The roots are intensely orange and yield a dye.

645. MORUS RUBRA L.

MULBERRY.

Along the Des Plaines River from Riverside north, very local and rare or overlooked. Some trees in Forest Preserve below Mt. Prospect Cemetery, near Alton Ry., that bear fruit scantily.

646. MORUS ALBA L.

MULBERRY.

An occasional escape along roads. Becoming a rather frequent introduction in woodlands, the seed bird-sown.

The variety tartarica Loudon is the common form.

647. URTICA GRACILIS Ait.

NETTLE.

Low ground, very abundant. Young leaves are often used for "greens."

648. URTICA DIOICA L.

NETTLE.

Waste places, very rare. (Babcock) Bowmanville. (Gates)

Seems generally to be infrequent or overlooked.

649. LAPORTEA CANADENSIS (L.) Gaud. Urticastrum divaricatum (L.) Kuntze.

WOOD NETTLE.

Rich soil in woods, locally abundant and widely distributed. Particularly common in the rich woods of the Des Plaines Valley.

650. PILEA PUMILA (L.) Gray. Adicea Raf.

RICH WEED. CLEAR WEED.

Low grounds, in timber; very common; also near dwellings in shade.

Common at Irving Park in shrubbery.

Niles woods, common. Riverside and Calumet region, infrequent; elsewhere rare. (R. and H.)

651. BOEHMERIA CYLINDRICA (L.) Sw.

FALSE NETTLE.

Low ground eastward from Dune Park, becomes very common in southwestern Michigan.

Swamps and shaded moist banks and woods south and southeast, frequent; elsewhere infrequent. (R. and H.)

Closely related to Ramie, the noted fibre plant.

652. PARIETARIA PENNSYLVANICA Muhl.

PELLITORY.

Dry barren knolls, frequent throughout.

Always an evidence of sterile soils.

ORDER 10—PROTEALES

A large order, all of the Southern Hemisphere.

ORDER 11—SANTALALES

Two Families, the Mistletoe and Sandalwood.

SANTALACEAE.

SANDALWOODS.

Herbs or shrubs, with apetalous whitish or greenish flowers, mostly imperfect, epigynous ovary becoming a drupe or nut.

250 species, mostly tropical, with only 2 in our district.

653. COMANDRA UMBELLATA (L.) Nutt.

FALSE TOAD-FLAX.

Dry open prairie or woodland knolls, very common in the Dune region. Abundant in the sand region north of Waukegan.

654. COMANDRA RICHARDSIANA Fernald. C. umbellata (L.) Nutt.

Sandy soils of the Dunes, Miller, and Ætna, Ind. (Umbach) Confused with the preceding species or is but a varietal form.

ORDER 12—ARISTOLOCHIALES

One Family, the Birthworts.

ARISTOLOCHIACEAE.

BIRTHWORTS.

Stemless or mostly climbing. Flowers 3-parted, apetalous, often very irregular, ovary inferior, 6-celled.

250 species, mostly tropical vines, with only 1 in our limits.

Many have most remarkable flowers, adapted to insect pollination.

The Goose flower is three feet in extreme length and astonishing in appearance and structure. Has bloomed in Lincoln Park Conservatory.

655. ASARUM CANADENSE L.

WILD GINGER.

Rich soil in timber, locally abundant in patches.

The variety reflexum (Bick.) Rob. is the common from everywhere. (Hill)



HERZBERG

WILD GINGER (*Asarum canadense*)

SPECIAL KEY TO THE KNOTWEEDS

Sepals 6, the outer 3 reflexed, the inner enlarged in fruit; seeds 3 angled	**The Docks. 7 Species**	**656–663**
Sepals 5, sometimes 4	**B**	
Sepals 4, the flowers green in long, loose spikes; leaves ovate, large	**Hooked Wood Knotweed**	**681**
B White flowers very fragrant; leaves triangular, arrow-shape; cultivated	**Buckwheat**	**688**
B Plant without such characters	**C**	
C Leaves linear	**D**	
C Leaves lance to ovate to sagittate	**E**	
D Stems angled, erect; flowers pink, sessile, solitary	**Slender Knotweed**	**669**
D Stems round, erect; flowers pink-purple on stalks, borne in racemes	**Polygonella**	**689**
E Flowers small, white to rose color, axillary; plants creeping or erect	**Knotweeds. 6 species**	**664–669**
E Flowers small, green, white or rose, in narrow slender spikes; leaves "hot"	**Smartweeds. 2 species**	**676–677**
E Flowers larger, conspicuous, pink to deep rose in terminal spikes; leaves "mild"	**Heartsease. 9 species**	**670–675, 678–680**
E Leaves sagittate; stems angled, downwardly hooked; flowers in clusters	**Tear-thumbs. 2 species**	**682–683**

ORDER 13—POLYGONALES

One Family, the Buckwheat or Knotweed.

POLYGONACEAE.

KNOTWEEDS.

Plants, of various aspects, apetalous, leaves with sheathing stipules from the jointed stems.

800 species, widely distributed, with 34 in our district.

656. RUMEX BRITANNICA L.

GREAT WATER DOCK.

Open marshes, widely distributed, but nowhere abundant. A striking plant, when well developed, up to seven feet in height.

657. RUMEX CRISPUS L.

YELLOW DOCK.

Waste places, very common.

Medicinal, often used as "greens" but not so commonly as the Bitter Dock.

The winged fruits are "tobacco" for the country lads.

658. RUMEX ELONGATUS Guss.

YELLOW DOCK.

Palos Park, 1909. (Umbach) Seems to be the advance guard of this plant, destined to be as common as the preceding.

Beach, also. (Gates, Pepoon)

659. RUMEX ALTISSIMUS Wood.

PALE DOCK.

Low grounds in rich soil, frequent or in some places common. Increases in number yearly.

660. RUMEX VERTICILLATUS L.

SWAMP DOCK.

In water along the Des Plaines River; also on Chicago River near Bowmanville.

Du Page River, common.

661. RUMEX OBTUSIFOLIUS L.

BITTER DOCK.

Along roads, especially eastward, frequent. A common spring "greens."

A form which is apparently a hybrid of this species and R. crispus L. is occasionally found. (R. & H.)

662. RUMEX SANGUINEUS L.

BLOODY-VEINED DOCK.

Waste places throughout, rare. Not recognized in the Man. 7th Ed.

663. RUMEX ACETOSELLA L.

FIELD SORREL.

Acid soils of old fields, abundant.

NOTE:—The Polygonums are, with reason, split up, by some authors (see Britton and Brown) into five genera. These are Polygonum (1–6), Persicaria (7–17), Tovara (18), Tracaulon (19, 20) and Tiniaria (21–24).

664. POLYGONUM EXSERTUM Small.

LONG-FRUITED KNOTWEED.

Rocky moist flats, near the Des Plaines River at Lemont, frequent. (Hill) Also at Lockport.

665. POLYGONUM AVICULARE L.

DOORYARD WEED. GOOSE-GRASS. KNOTWEED.

Dooryards and paths, common. Variable in size and foliage.

Grant Park, between Michigan Boulevard and the I. C. Ry., is largely a refreshing green lawn by reason of this plant.

666. POLYGONUM AVICULARE LITTORALE (Link) Koch. P. littorale Link.

COAST KNOTWEED.

Waste places and railways, common, generally confused with the species.

667. POLYGONUM ERECTUM L.

ERECT KNOTWEED.

Yards and streets, common; generally infested with a mildew, causing the leaves to have a whitish tint.

668. POLYGONUM RAMOSISSIMUM Michx. P. camporum of auth.

BUSHY KNOTWEED.

Sandy soils near Lake Michigan, occasional, usually growing in small groups of five or more.

This never seems to be abundant in spite of its free seeding.

669. POLYGONUM TENUE Michx.

SLENDER KNOTWEED.

Abundant on sandy flats, Miller, Dune Park and east. (Umbach, Pepoon)

Sand ridges, Calvary and south. (Johnson)

On the Waukegan Moorland.

670. POLYGONUM LAPATHIFOLIUM L. P. incarnatum of auth. and Ell.? Persicaria lapathifolia (L.) S. F. Gray.

HEARTSEASE.

Low ground, abundant. Very common in moist fields, especially if soil is alluvial.

Why the Manual Ed. 7 does not use the common name seems a strange omission.

By many this and related species are called, without distinction, "Smartweeds," although their leaves are very mild and tasteless.

671. POLYGONUM AMPHIBIUM L. Persicaria amphibia (L.) S. F. Gray.

WATER KNOTWEED.

Shoal waters throughout, but especially abundant southeast.

Very common in Dead River, north of Waukegan.

672. POLYGONUM AMPHIBIUM HARTWRIGHTII (Gray) Bissell. P. Hartwrightii Gray.

WATER PERSICARIA.

Common locally in moist or even fairly dry places, always in dense patches. Seems like a good species, but the 7th Ed. makes it a variety.

The amphibious Polygonums are in need of critical revision, which is being attempted by several.

673. POLYGONUM MUHLENBERGII (Meisn.) Wats. P. emersum Brit.

WATER HEARTSEASE.

Common in low grounds. A form in water eastward with brilliant flowers and really showy. An exceedingly variable species which needs more study.

674. POLYGONUM PENNSYLVANICUM L. Persicaria pennsylvanica (L.) Small.

HEARTSEASE.

Low grounds, common. Also in waste places as a weed.

675. POLYGONUM CAREYI Olney. Persicaria (Olney) Greene.

CAREY'S HEARTSEASE.

Swampy land, West Pullman. (Cowles) Very local. Abundant eastward.

676. POLYGONUM HYDROPIPER L. Persicaria (L.) Small.

SMARTWEED. WATER PEPPER.

Low open grounds, particularly in pastures. Very abundant, evidently introduced into our area.

Often used as a pain relieving poultice by country folk.

677. POLYGONUM ACRE H. B. K. P. punctatum Ell. Persicaria punctata (Ell.) Small.

SMARTWEED.

Similar situations as the last, but less common.

678. POLYGONUM ORIENTALE L. Persicaria (L.) Spach.

PRINCE'S FEATHER. LOVE LIES BLEEDING.

Waste places and streets. Rare.

The country folk call this plant "kiss me over the garden gate."

A very striking plant when in full bloom and eight to ten feet tall.

679. POLYGONUM PERSICARIA L. Persicaria (L.) Small.

LADY'S THUMB.

Very common in waste places, vacant lots and roadsides.

680. POLYGONUM HYDROPIPEROIDES Michx. Persicaria (L.) Michx. Small.

MILD WATER PEPPER.

Abundant in shoal water of ditches, ponds, and sluggish streams. Exceedingly common eastward through Indiana.

Abundant at Skokie Marsh. (Sherff) Growing in sheets, solid pink when blooming.

681. POLYGONUM VIRGINIANUM L. Tovara virginiana (L.) Raf.

WOOD KNOTWEED.

Rich low woodlands, north and southeast; not frequent except in very local situations. The fruit is a very interesting bur-like contrivance.

682. POLYGONUM ARIFOLIUM L. Tracaulon (L.) Raf.

TEAR-THUMB.

Burnt areas near Dock Siding, Porter, Ind., common. (Hill) Miller. (Umbach) Abundant in southwestern Michigan.

683. POLYGONUM SAGITTATUM L. Tracaulon (L.) Small.

TEAR-THUMB.

Moist soil in marshes, especially in open woodlands and wooded swamps, common.

684. POLYGONUM CONVOLVULUS L. Tiniaria convolvulus (L.) Webb and Moq.

BLACK BIND WEED. FALSE BUCKWHEAT.

A common weed of fields and waste places. One of our pernicious twiners.

685. POLYGONUM SCANDENS L. P. dumetorum var. Gray. Tiniaria scandens (L.) Small.

CLIMBING FALSE BUCKWHEAT.

Low thickets, frequent.

686. POLYGONUM CILINODE Michx. Tiniaria cilinodis (Michx.) Small.

FRINGED BIND WEED.

Hilly or stony thickets along the Des Plaines River.

687. POLYGONUM DUMETORUM L. Tiniaria dumetorum (L.) Opiz.

COPSE BIND WEED

Low rich woods, southeast and along the Des Plaines River, not common.

688. FAGOPYRUM ESCULENTUM Moench.

BUCKWHEAT.

Roadsides and along railways, common.

689. POLYGONELLA ARTICULATA (L.) Meisn.

POLYGONELLA.

Abundant on open sandy slopes from Clarke, Ind., eastward, near Lake Michigan.

One of the latest bloomers. Common on the Waukegan sands.

ORDER 14—CHENOPODIALES

Seven Families, the Goosefoot, Amaranth, Phytolacca, Four-o'Clock, Carpet Weed, Purslane, and Pink.

CHENOPODIACEAE.

GOOSEFOOTS.

Weedy plants with mostly succulent leaves, minute greenish flowers, and one-celled and one-seeded ovaries, calyx inclosing the fruit.

20 species in our district.

690. CYCLOLOMA ATRIPLICIFOLIUM (Spreng.) Coult. C. platyphyllum Moq.

TUMBLE WEED. (WESTERN)

Sandy soils southeast, near railway lines, common. Everywhere in the sands. A common tumble weed, assuming most brilliant red tints in Fall.

Less common north in sandy soils.

691. CHENOPODIUM AMBROSIOIDES L.

MEXICAN TEA.

Along railways, frequent.

Exceedingly fragrant with a most pleasing odor. Grows usually in colonies.

692. CHENOPODIUM ANTHELMINTICUM L.

WORM SEED.

Gardens and streets, Irving Park. Rare.

Very strong scented.

693. CHENOPODIUM BOTRYS L.

JERUSALEM OAK.

Waste places and railways, frequent.

694. CHENOPODIUM CAPITATUM (L.) Asch.

STRAWBERRY BLITE.

Near Whiting (Cowles), and doubtless elsewhere in newly cleared land. Striking when fruit is ripe, looking much like strawberries.

695. CHENOPODIUM BONUS-HENRICUS L.

GOOD KING HENRY.

Along the Santa Fe Ry., southwest of Chicago, rare.

696. CHENOPODIUM GLAUCUM L.

GLAUCOUS LEAVED GOOSEFOOT.

Vacant lots, north side, Chicago; common locally.

697. CHENOPODIUM HYBRIDUM L.

GOOSEFOOT. MAPLE-LEAVED GOOSEFOOT.

Vacant lots and gardens, frequent. About dumps and along railways.
In the Dunes, occasional in open places.

698. CHENOPODIUM ALBUM L.

PIGWEED. LAMB'S-QUARTERS. GOOSEFOOT.

Common as a weed. Everywhere in vacant lots, fields, streets and alleys. Often used as a salad vegetable.

699. CHENOPODIUM ALBUM VIRIDE (L.) Moq.

GREEN PIGWEED.

Same localities as the species but not so common.

700. CHENOPODIUM MURALE L.

TOWN GOOSEFOOT.

Along the Penn. Ry. at Clarke, Ind.

701. CHENOPODIUM URBICUM L.

CITY GOOSEFOOT.

Common in vacant lots along Halsted St., Chicago.

702. CHENOPODIUM BOSCIANUM Moq.

WOODLAND GOOSEFOOT. WOOD PIGWEED.

Woods along the Calumet River at Blue Island, frequent. (Hill)
Along the Chicago Junction Ry. at Summit, rare.
Dune regions, occasional.
In the forest tracts of the Des Plaines valley.

703. CHENOPODIUM LEPTOPHYLLUM Nutt. C. album var. Moq.

NARROW LEAVED GOOSEFOOT.

Abundant in sandy soil, Whiting, Ind., and Auburn Park. (Hill)

704. ATRIPLEX PATULA L.

ORACH.

Waste places, streets and alleys; common in Chicago and less abundant in smaller cities.

705. ATRIPLEX PATULA HASTATA (L.) Gray.

SPEAR ORACH.

Much more frequent than the species, in similar locations.

706. ATRIPLEX ARGENTEA Nutt.

SILVER ORACH.

Along the railroad dump south of the Des Plaines River, at Summit on the Chicago Junction Ry., rare.

707. CORISPERMUM HYSSOPIFOLIUM L.

BUGSEED.

Sands near Lake Michigan, common.

708. SALSOLA KALI L.

SALTWORT.

Frequent on the lake shore near the University grounds, Evanston, where it is associated with Lathyrus maritimus Bigel., and Polanasia graveolens Raf.

This is one of the two localities within our limits from which the plant has been reported; the other being at Miller, Ind., very rare.

It is not reported by recent collectors and may be practically exterminated.

709. SALSOLA KALI TENUIFOLIA G. F. W. Mey. Salsola pestifer A. Nelson.

RUSSIAN THISTLE.

Common in sandy soils, especially near railways. A tumble weed of large size, often three feet in diameter. Assuming beautifully brilliant coloration in Autumn.

Occurs annually by the thousands at Gary, Ind.

AMARANTHACEAE.

AMARANTHS.

Weedy herbs with small usually greenish flowers, enclosed with dry scarious bracts, these often colored.

425 species, mostly of warm regions, with about 13 in our district.

710. AMARANTHUS RETROFLEXUS L.

REDROOT. PIGWEED.

Common in fields, gardens and waste places.

The first name more common. Pigs are not particularly fond of it.

711. AMARANTHUS HYBRIDUS L. A. chlorostachys Willd.

GREEN AMARANTH.

In similar situations as the preceding, not common.
On C. B. & Q. at Crawford. (Moffatt)

712. AMARANTHUS PANICULATUS L. A. hybridus var. U. and B.

PURPLE AMARANTH.

Roadsides and vacant city lots, occasional.
C. & A. Ry., Brighton Park. (Moffatt) Along the Wabash Ry., east of Clarke Junction, Ind.

713. AMARANTHUS GRAECIZANS L. A. albus L.

COMMON TUMBLE WEED.

Fields, common. In the Autumn and Winter, finding lodgment along wire fences in windrows.

714. AMARANTHUS BLITOIDES Wats.

CREEPING AMARANTH.

Fields, gardens and waste places, common.

715. AMARANTHUS SPINOSUS L.

THORNY AMARANTH.

Along railroads and occasional in waste places.
Rather common on the "dump" crossing the Des Plaines valley at Summit.

716. CLADOTHRIX LANUGINOSA Nutt.

CLADOTHRIX.

Along the C. & A., near Brighton Park. (1894, Moffatt) Probably since exterminated.

717. ACNIDA TUBERCULATA Moq.

WATER HEMP.

Low alluvial soils, Des Plaines and Chicago River valleys.

718. ACNIDA TUBERCULATA SUBNUDA Wats. A. tamariscina concatenta U. and B.

WATER HEMP.

Sandy waste soil, Ravenswood. (Gates)

719. ACNIDA TUBERCULATA PROSTRATA (H. and B.) Rob. A. tamariscina var. U. and B.

CREEPING WATER HEMP.

Very common along the Du Page River at Warrenville.

720. ACNIDA TAMARISCINA (Nutt.) Wood.

WATER HEMP.

Graceland, doubtless introduced. (Gates)

721. FROELICHIA FLORIDANA (Nutt.) Moq. Froelichia campestris Small.

PRAIRIE FROELICHIA.

Dry sandy fills of the railways. Lake Shore & Wabash between Miller and Clarke Junction and Pine, rare. Evidently a stray brought in by passing trains.

PHYTOLACCACEAE.

POKEWEEDS.

Similar to the Goosefoots, but the fruit a berry.
85 species, mostly tropical, with 1 in our district.

722. PHYTOLACCA DECANDRA L.

POKE BERRY. SCOKE. GARGET.

Occasional plants here and there, becoming common eastward.
Miller, Dune. Niles, Evanston, Harlem. Near Mt. Prospect, southwest of Willow Springs. Abundant in Forest Preserve near C. & A. Ry.

NYCTAGINACEAE.

FOUR-O'CLOCKS.

Mostly herbs with opposite leaves and flowers with delicate colored calyx, corolla wanting.
250 species, with 4 in our district.

723. OXYBAPHUS NYCTAGINEUS (Michx.) Sweet. Allionia nyctagineus Michx.

UMBRELLA-WORT. WILD FOUR-O'CLOCK.

Sand and gravel ballast of railroads, very common. Does not seem to grow in other habitats.

724. OXYBAPHUS HIRSUTUS (Pursh) Sweet. A. hirsuta Pursh.

HAIRY UMBRELLA-WORT.

C. B. & Q. Ry. near Lisle, occasional specimens. (Umbach)

725. OXYBAPHUS ALBIDUS (Walt.) Sweet. A. albida Walt. Allionia lanceolata Rydb.

PALE UMBRELLA-WORT.

Northwestern Ry. at Evanston. (Gates, 1905)

726. OXYBAPHUS LINEARIS (Pursh) Rob. A. linearis Pursh.

NARROW LEAVED UMBRELLA-WORT.

Roadsides at Morgan Park. (Hill, 1898)
Railway at Romeo. (Umbach)

KEY TO THE FORKED CHICKWEEDS, CHICKWEEDS, AND PINKS OF THE CHICAGO AREA

	Plants small, forked branched and with small green apetalous flowers	A	
	Plants not as above, with white, pink or red flowers	B	
A	Plants pubescent, low, much forked, decumbent; leaves lanceolate acute	Forked Chickweed	727
A	Plants smooth, erect; leaves oblong, obtuse	Tall Forked Chickweed	728
B	Flowers conspicuous, approaching or more than ½″	K	
B	Flowers less than ⅓″ except 739	C	
C	Flowers pink; leaves linear, terete, fleshy	Sand Spurrey	730
C	Flowers pink; leaves lanceolate or linear; a brown sticky zone below each node	Sleepy Catchfly	746
C	Flowers white or not as above	D	
D	Petals entire or nearly so	E	
D	Petals cleft or divided by an end notch	G	
E	Leaves in two sets of six or eight at each node; flowers ⅕″ long	Spurrey	731
E	Leaves clustered in the axils of paired ones at each node, long, awl-shape	Stiff Sandwort	735
E	Leaves paired at nodes without extra axillary ones	F	
F	Leaves oblong or oval; flowers few, rather conspicuous; in woods	Wood Sandwort	732
F	Leaves ovate and, like whole plant, very small, stiff; flowers ⅛″ long; open places	Thyme-Leaved Sandwort	733
F	Leaves narrow, ilnear or awl-shaped, almost filiform, finely pubescent	Slender Leaved Sandwort	734
F	Leaves lanceolate; plant much branched; flowers very many, pink, in panicles	Baby Breath	756
G	Leaves narrow, linear	H	
G	Leaves broader, lanceolate to ovate	I	
H	Stems weak with rough angles; flower pedicels stiff, spreading; flowers small	Stitchwort	736
H	Stems erect, not angled, hairy; flowers large, ¾″	Field Chickweed	739
I	Plants creeping or decumbent	J	
I	Plants erect or nearly so; leaves lanceolate; flowers small, long stalked	Nodding Chickweed	742
J	Plants clammy, pubescent; leaves oblong; in grass mostly	Mouse-Ear Chickweed	741
J	Plants not clammy, pubescent-hairy; leaves ovate; in gardens	Chickweed	737
K	Plant white woolly all over; leaves oblong; flowers rose-purple	Mullein Pink	744
K	Plant not white woolly all over	L	

L	Flowers with red colors	M	
L	Flowers with white colors	P	
M	Leaves lance-linear; plant tall, slender, densely hairy; flowers large, showy	Cockle	743
M	Leaves oblong or ovate or oblong-lanceolate	N	
N	Flowers intensely red, large; leaves oblong-lanceolate, sticky-pubescent	Fire Pink	750
N	Flowers pink or pale red	O	
O	Plant smooth, glaucous; leaves ovate to lanceolate, united at base; flowers pink	Cow Herb	755
O	Plant smooth; leaves ovate, strongly 3–5 ribbed; flowers showy, pink, often double	Bouncing Bet	754
P	Plant smooth, glaucous; leaves ovate or lance-oblong; calyx inflated	Bladder Campion	753
P	Plant puberulent; leaves in fours; petals fringed	Star Campion	751
P	Plant more or less sticky, pubescent	Q	
P	Plant hairy but not sticky	R	
Q	Styles 5; leaves ovate-oblong; flowers nocturnal, fragrant	White Campion	745
Q	Styles 3; leaves ovate-lance; flowers nocturnal, fragrant, often pink	Night Flowered Catchfly	749
R	Leaves ovate; plant glandular, pubescent above	Water Chickweed	738
R	Not as above	S	
S	Plant long-hairy; leaves lanceolate to oblong; petals deeply notched	Barren Chickweed	740
S	Plant minutely puberulent to smooth; leaves lance-oblong; petals notched	Snowy Campion	752

ILLECEBRACEAE. Corrigiolaceae.

KNOTWEEDS. FORKED CHICKWEEDS.

Herbs, mostly opposite leaved, apetalous.

50 species of wide distribution, with 2 in our district.

727. ANYCHIA POLYGONOIDES Raf. A. dichotoma Man. Ed. 6.

LOW FORKED CHICKWEED.

Dry woods, in shade, not common. (Babcock) No locality is given. It seems to be overlooked.

728. ANYCHIA CANADENSIS (L.) B. S. P. A. capillacea, DC.

TALL FORKED CHICKWEED.

Near Riverside in dry soil. Sag Bridge in hillside wood, and at Glen Ellyn. (Moffatt)

Lisle. Palos Park. (Umbach) Dune Park also, not common.

Medinah and vicinity in dry woods.

AIZOACEAE.

CARPET WEEDS.

Herbs, prostrate, with opposite or verticillate leaves and small perfect flowers.

500 species, mostly of warm regions, with 1 in our district.

729. MOLLUGO VERTICILLATA L.

CARPET WEED.

Sandy fields, eastward, common. Rare north.

CARYOPHYLLACEAE. Alsinaceae and Caryophyllaceae.

PINKS. CHICKWEEDS. SANDWORTS.

Herbs with opposite leaves from swollen nodes and regular perfect flowers. Many are ornamental.

1500 species with 27 in our district.

730. SPERGULARIA MARINA (L.) Griseb. Tissa marina (L.) Brit.

SAND SPURREY.

Waste places on west side, 47th and Center Ave., common. (Moffatt)

731. SPERGULA ARVENSIS L.

CORN SPURREY.

Near Palatine and Des Plaines in grain fields, rare. (Babcock)

Eggleston, in lawns. (Hill)

732. ARENARIA LATERIFLORA L. Moehringia (L.) Fenzl.

WOOD SANDWORT.

Low rich woods, particularly abundant in Lake and Porter Cos., Ind. Also along the Chicago and Des Plaines rivers.

Forest Preserve of Chicago Heights, abundant.

733. ARENARIA SERPYLLIFOLIA L.

THYME-LEAVED SANDWORT.

Sandy fields, common, becoming exceedingly abundant in the sandy soils of southwestern Michigan and northwestern Indiana.

734. ARENARIA PATULA Michx.

SLENDER-LEAVED SANDWORT.

Wet sandy flat east of Romeo, of frequent occurrence here. Reported locally at Stony Island, Grand Crossing.

735. ARENARIA STRICTA Michx. A. Michauxii Hook. f.

STIFF SANDWORT.

Common on old dunes and sandy ridges, particularly southeast near lake shore. Very local along the North Shore, rather common on Waukegan sands.

736. STELLARIA LONGIFOLIA Muhl. Alsine longifolia (Muhl.) Brit.

WOOD STITCHWORT. WOOD SANDWORT.

Moist grassy and open woodlands. Chicago and Des Plaines river valleys. New Lenox.

Along the north branch of the Chicago River at Edgebrook.

737. STELLARIA MEDIA (L.) Cyrill. Alsine media L.

CHICKWEED.

Truck and home gardens, very abundant. The most common truck garden weed near Chicago blooming whenever there is no frozen ground. In bloom when snowbanks melt, exposing the unfrozen earth. Found in blossom in December.

738. STELLARIA AQUATICA (L.) Scop. Alsine aquatica (L.) Brit.

WATER CHICKWEED.

Found in a garbage dump at Waukegan. (Pepoon, Gates) Occasional along railways in the border ditches.

739. CERASTIUM ARVENSE L.

MEADOW CHICKWEED. FIELD CHICKWEED.

Rocky places near the Des Plaines River from Summit south, not frequent.

740. CERASTIUM ARVENSE OBLONGIFOLIUM (Torr.) Hol. & Brit. C. velutinum Raf. C. oblongifolium Torr.

FIELD MOUSE-EAR CHICKWEED. BARREN CHICKWEED.

Dry grassy sandy ridges, south of Colehour, Ind. (Hill) Ridge Ave., Evanston. (Johnson)

Higginbotham's woods near Joliet. On the C. R. I. & P. Ry. at New Lenox, abundant.

741. CERASTIUM VULGATUM L. C. viscosum L.

LARGER MOUSE-EAR CHICKWEED.

Common in lawns, pastures and grassy places generally. Often very troublesome. Often taking possession of areas in park lawns.

742. CERASTIUM NUTANS Raf. C. longe pedunculatum Muhl.

NODDING CHICKWEED.

Moist alluvial soils, common locally throughout.

Very abundant (1921) in the cleared Higginbotham woods near New Lenox.

743. AGROSTEMMA GITHAGO L. Lychnis Scop.

CORN COCKLE. CORN CAMPION.

Frequent along railways, also in grain fields. Not abundant except about wheat fields.

744. LYCHNIS CORONARIA L.

MULLEIN PINK. ROSE CAMPION.

Roadsides in occasional patches, eastward. A showy plant, often cultivated. Rarely if ever found in the immediate vicinity of Chicago.

745. LYCHNIS ALBA Mill. L. vespertina Sibth.

WHITE CATCHFLY. WHITE CAMPION.

Becoming more and more common as a weed in fields, meadows, and pastures, particularly in sandy soils.

746. SILENE ANTIRRHINA L.

SLEEPY CATCHFLY.

Streets, roadsides, railways, and vacant lots, common.

Our only genuine catchfly with its sticky internodal bands, to which small flies and ants stick fast.

747. SILENE ANTIRRHINA DIVARICATA Rob.

SPREADING CATCHFLY.

Face of limestone cliff at Lemont. Banks of Mud Creek, Thornton. (Hill)

748. SILENE ARMERIA L.

SWEET WILLIAM CATCHFLY.

Quarries at Lemont. (Raddin) Maywood. (Higley)

749. SILENE NOCTIFLORA L.

NIGHT-FLOWERING CATCHFLY.

Streets and yards of dwellings, Naperville. Ravenswood. Rare.



WOODRUFF

BLADDER CAMPION (*Silene latifolia*)

750. SILENE VIRGINICA L.

FIRE PINK.

Gravelly soils, near Des Plaines River, Riverside. Naperville, near Du Page River, rare. Niles. Mt. Forest.

Frequent in open woods from Whiting, Ind., south. Banks of the Des Plaines, abundant. (Babcock) Seems to be an error or the plant is exterminated in the Indiana territory named by Babcock.

Common in the Forest Preserve near Willow Springs.

751. SILENE STELLATA (L.) Ait. f.

STAR CAMPION.

Open woodlands and thickets, common.

752. SILENE NIVEA (Nutt.) Otth. S. alba Muhl.

SNOW CAMPION.

Grassy moist banks, along the Des Plaines River, Du Page River, Chicago River, rare. Evanston, Niles, Morgan Park. (Higley and Raddin)

753. SILENE LATIFOLIA (Mill.) Brit. & Rend.

BLADDER CAMPION.

Vacant waste places, Ravenswood, rare. Fields, occasional. Evanston (Babcock)

754. SAPONARIA OFFICINALIS L.

SOAPWORT. BOUNCING BET.

Roadsides and vacant lots, common. Often double.

Varies greatly in size and color of flowers.

Valuable as a source of saponin, used in fine soaps.

755. SAPONARIA VACCARIA L. Vaccaria vulgaris Host.

COW-HERB.

Fields, occasional; also along the railways, more frequent.

756. GYPSOPHILA MURALIS L.

BABY BREATH.

Street sides, west of Bowmanville, on Foster Ave. A well established and very large plant. Probably a transient specimen. No other reports.

PORTULACACEAE.

PURSLANES.

Herbs, often succulent, with unsymmetrical perfect flowers.

150 species, mostly American, with 5 in our district.

757. CLAYTONIA VIRGINICA L.

SPRING BEAUTY.

Wooded sunny slopes, very common. Forms, in early Spring, solid carpets of pink.



PEPOON

BOUNCING BET — A FLOWER THAT HAS BECOME A WEED



PEPOON

FLOWERING SPURGE — A WEED THAT HAS BECOME A FLOWER

A CHANGE IN REPUTATION

758. CLAYTONIA CAROLINIANA Michx.

WIDE-LEAVED SPRING BEAUTY.

With the last but not nearly as common. (H. & R.) Does not appear in the lists of others and the citation doubtless is erroneous. It is admitted, however, under protest.

759. TALINUM TERETIFOLIUM Pursh.

FLAME-FLOWER.

Sandy hills, Miller and vicinity, rare. (Umbach, Pepoon)

760. TALINUM RUGOSPERMUM Holzinger.

PRAIRIE TALINUM.

Sandy hills, Miller, Ind. (Umbach)

Many authorities consider this a mere variety of the last.

761. PORTULACCA OLERACEA L.

PURSLANE. PUSSLEY.

Gardens and fields, common; commonly attacked by a larva that destroys thousands of plants. A useful salad plant.

ORDER 15—RANALES

THE FROG-WORTS.

Nine Families, the Water Lilies, Horn-worts, Magnolias, Pawpaws, Crowfoots, Barberries, Moonseeds, Strawberry Bush, and Laurel.

CERATOPHYLLACEAE.

HORN-WORTS.

Aquatics with whorled finely divided leaves and minute axillary flowers.

One species in our district, of wide distribution. The flowers rarely are noted by observers.

762. CERATOPHYLLUM DEMERSUM L.

HORN-WORT.

Ditches and sloughs and especially the Calumet River, common.

Chicago and Des Plaines rivers. Skokie.

NYMPHAEACEAE.

WATER LILIES.

Aquatic perennials with horizontal root-stocks and mostly peltate ample leaves.

33 species, widely distributed, with 7 in our district.

763. NYMPHAEA ADVENA Ait. Nuphar Sibth.

COW LILY. SPATTER DOCK. YELLOW POND LILY.

Sluggish streams and ponds, very common and excessively variable. Perhaps several species are here included. (See monograph published by the Smithsonian Inst.)

764. NYMPHAEA ADVENA VARIEGATA (Engelm.) Fernald.

VARIEGATED COW LILY.

Near South Chicago. (Babcock)

765. NYMPHAEA RUBRODISCA (Morong.) Greene.

YELLOW WATER LILY.

In similar locations.

A possible hybrid of the last variety and N. microphylla.

NOTE:—The ordinary pond or sluggish stream will generally yield three to five quite distinct forms as to foliage, stamens and pistil. The collector ought to seek for the different types and assist in clearing the tangle of uncertainty.

766. CASTALIA ODORATA (Ait.) W. & W. Nymphaea L.

FRAGRANT WATER LILY.

Ponds at eastern border of area. Porter Co., Ind. Not common.

North Branch. Near Palatine. Berry Lake, Ind. (H. & R.) Skokie. (Sherff)

In southwestern Michigan specimens the under leaf surface is usually deeply red.

767. CASTALIA TUBEROSA (Paine) Greene. N. reniformis auth. not Walt.

WESTERN WATER LILY.

Ponds and slow streams, common. Variable in size of flower and foliage. Apparently the only species commonly reported.

The Chinese use the tubers in cookery.

768. NELUMBO LUTEA (Willd.) Pers.

LOTUS.

At Calumet, Clarke, Ind., rare. Calumet Lake. (Hill) Abundant northwest of Chicago in some sections of the Fox Lake region as Grass Lake.

Probably Indian planted, as the edible seeds were an important article of diet.

The Clarke station is in a precarious condition, by reason of the proximity of Gary. In 1920 plants apparently exterminated by the influx of sewage.

The high water of 1924 appears to have at least temporarily destroyed the Fox Lake plants as none were seen in 1925 or 1926.

A small colony is in Wolf Lake, Ind. (Cowles).

769. BRASENIA SCHREBERI Gmel. B. purpurea Casp. B. peltata Pursh.

WATER SHIELD.

Ponds from East Chicago eastward. Also near Waukegan. Very abundant locally.

RANUNCULACEAE.

CROWFOOT FAMILY.

Herbs mostly, usually acrid, often poisonous, flowers hypogynous, usually regular, pistils several or many, distinct, rarely one. Stamens many, flowers often apetalous.

1050 species of world-wide distribution, many highly medicinal. Many forms are very ornamental. There are 39 in our district.

770. RANUNCULUS CIRCINATUS Sibth. Batrachium circinatum (Sibth.) Rehb.

STIFF WATER CROWFOOT.

Streams of Calumet region, rare.

771. RANUNCULUS AQUATILIS L. VAR. CAPILLACEUS DC. Batrachium tricophyllum (Chaix) F. Schultz.

WHITE WATER CROWFOOT.

Calumet River. Abundant near Clarke, Ind. North branch of Chicago River. Ponds north. Abundant locally.

The Calumet River station for most water plants now fails west of Gary by reason of sewage.

New Lenox in ponds near Hickory Creek.

772. RANUNCULUS CYMBALARIA Pursh. Oxygraphys Prantl.

SEASIDE CROWFOOT.

Ditch along Peterson Ave., west of Rose Hill. Common locally.

Ditches, Englewood and Evanston. (Hill, 1870)

Frequent south and west of Hyde Park. (H. & R.)

773. RANUNCULUS DELPHINIFOLIUS Torr. R. multifidus Pursh.

YELLOW WATER CROWFOOT.

Ponds and ditches abundant throughout.

Striking when in bloom, often covering the water surface with its golden bloom. Very common in Dead River, north of Waukegan.

774. RANUNCULUS SCELERATUS L.

CURSED CROWFOOT.

Ditches about Chicago, frequent. Always an uncommon plant as to number of individuals and sparsity of distribution, usually occurring as single specimens.

775. RANUNCULUS ABORTIVUS L.

SMALL CROWFOOT.

Open woods, common. Variable as to foliage, which is often malformed or fungus infested.

Southward it is becoming a garden weed as in western Kentucky.

776. RANUNCULUS RECURVATUS Poir.

HOOKED CROWFOOT.

Woods, very common, in low rich soils. An abundant and universally distributed plant.



WOODRUFF

CROWFOOT (*Ranunculus septentrionalis*)

777. RANUNCULUS FASCICULARIS Muhl.

EARLY CROWFOOT.

Dry open knolls, north and south, common.

Usually an evidence of clay and a very early bloomer. The country lad "goes barefoot" on its first appearance.

778. RANUNCULUS SEPTENTRIONALIS Poir.

SWAMP CROWFOOT. WOOD BUTTERCUP. CROWFOOT.

Very abundant in wet woods and low open grounds. Spreads very rapidly by its long rooting runners.

779. RANUNCULUS REPENS L.

CREEPING BUTTERCUP.

Wet prairies west of Chicago, near Wheaton. (Moffatt) Maywood. (Babcock) S. Englewood. (Hill)

Abundant in the yards of Irving Park, often killing out the grass.

780. RANUNCULUS PENNSYLVANICUS L. f.

BRISTLY CROWFOOT.

Marshes and wet grass lands, frequent.

781. RANUNCULUS BULBOSUS L.

TALL BUTTERCUP.

Fields, Evanston and Niles. Pullman, rare. Introduced in grass seed.

Raddin says in 1896, "apparently exterminated north."

782. RANUNCULUS ACRIS L.

BUTTERCUP.

Railways especially southeast, frequent becoming gradually more abundant. Near Waukegan. On all C. & N. W. lines north and west.

As a garden plant increases rapidly by its very numerous seeds.

783. MYOSURUS MINIMUS L.

MOUSE-TAIL.

Prairies, rare. Evanston. (Babcock, 1886) No late reports. Probably an exterminated species.

784. THALICTRUM DIOICUM L.

EARLY MEADOW RUE.

Dry wooded banks and hilly woods, common.

785. THALICTRUM DASYCARPUM F. & L. T. purpurascens Man. Ed. 6 in part.

PURPLE MEADOW RUE.

Moist open ground, especially alluvial soils, very common.

Naperville. Miller. Waukegan. Mt. Tom. (Umbach)

786. THALICTRUM REVOLUTUM DC. T. purpurascens Man. Ed. 6 in part.

WAXY MEADOW RUE.

Banks and wooded slopes, especially southeast.

787. THALICTRUM POLYGAMUM Muhl. T. Cornuti Man. Ed. 5, not L.

GREAT MEADOW RUE.

Wet prairies and banks of streams, rare. South Chicago specimens measured eleven feet.

Ravenswood. (Raddin, 1894)

788. ANEMONELLA THALICTROIDES (L.) Spach. Syndesmon Hoffm.

RUE ANEMONE.

Dry hillsides along the Des Plaines and the ravines north, frequent.

Niles woods, very common.

Southwest very abundant. Common locally among the Dunes.

789. HEPATICA TRILOBA Chaix.

HEPATICA.

Hardly in our district, approaching from the east as far as Michigan City.

Reported as found at Winnetka, Glencoe, Blue Island (?) (H. & R.)

Waukegan. (Umbach) Blue Island. (Brennan)

790. HEPATICA ACUTILOBA DC. H. acuta Brit.

HEPATICA.

Woods, especially near the lake, very common. Our common species and probably the only one near the center of our area.

Abundant along the Des Plaines River.

Remarkable for its three flower colors—white, blue and rose, in all degrees of intensity. Leaves often 5–7 lobed, malformed by a fungus.

791. ANEMONE PATENS WOLFGANGIANA (Bess.) Koch. Pulsatilla hirsutissima Brit.

PASQUE FLOWER. ROCK ANEMONE. ROCK LILY. EASTER FLOWER. WILD CROCUS.

Dry banks in barren soil. Palatine. Abundant north and west of us, found on every rocky knoll that is devoid of trees and bushes.

With Skunk Cabbage, the very first of the spring flowers, blossoming in March.

792. ANEMONE CAROLINIANA Walt.

CAROLINA ANEMONE.

"Prairies, rare" says Babcock. Questionable if within our limits, as no late observer reports it.

Evanston. Near Lake Calumet. (H. & R.)



WOODRUFF

THE PRAIRIE ANEMONE (*Anemone canadensis*)



WOODRUFF

MARSH MARIGOLDS (*Caltha*)

793. ANEMONE CYLINDRICA Gray.

THIMBLE-WEED.

Dry hills, particularly near the lake. Most abundant in the Dune region.

794. ANEMONE VIRGINIANA L.

TALL ANEMONE.

Woods and thicket borders, common.

795. ANEMONE CANADENSIS L. A. pennsylvanica L.

PRAIRIE ANEMONE.

Moist banks and prairies, common, growing as a usual thing in dense colonies of hundreds of plants. Very fine. Often cultivated.

796. ANEMONE QUINQUEFOLIA L. A. nemorosa Man. Ed. 6, not L.

WOOD ANEMONE. WIND FLOWER.

Open woods, common. Particularly fine colonies are to be found in all wooded swamps, on the elevations about large trees.

Very abundant in woods near north branch of Chicago River where Skokie Creek joins the river.

797. CLEMATIS VIRGINIANA L.

VIRGIN'S BOWER.

Low thickets, common; particularly so along the Des Plaines River.

798. CLEMATIS PITCHERI T. & G. Viorna Pitcheri (T & G.) Brit.

LEATHER FLOWER.

Plentiful along the Des Plaines River near Joliet. (Clute)

Very common in central Illinois.

799. ISOPYRUM BITERNATUM (Raf.) T. & G.

FALSE RUE ANEMONE.

Low rich woods, common locally. Particularly abundant along the Des Plaines River and north branch of the Chicago River. Niles woods.

800. CALTHA PALUSTRIS L.

MARSH MARIGOLD. "COWSLIP." GOWAN.

Swamps, common. Delights particularly in cold springy bogs. Abundant in wet woods northeast of Edgebrook.

The root leaves are a pleasing "greens," coming very early, both foliage and flower.

801. COPTIS TRIFOLIA (L.) Salisb.

GOLD THREAD.

Tamarack swamps, Miller and Mineral Springs, Ind. Very common locally.

802. AQUILEGIA CANADENSIS L.

COLUMBINE.

Wooded banks, especially abundant in the sand regions southeast. Originally equally common in Edgewater and north.

Very variable as to color of flowers and evidently many seedling races prevail. When cultivated hybridizes freely with the European species, producing very numerous color forms.

803. AQUILEGIA VULGARIS L.

COLUMBINE.

Alleys and roadsides, Naperville. (Umbach)

804. DELPHINIUM CONSOLIDA L.

LARKSPUR.

Vacant lots and streets, rare. Ravenswood and other outlying parts of Chicago.

Britton and Brown say "numerous reports of D. consolida in the eastern United States all prove to be D. ajacis, but on the authority of good observers the species is admitted."



PEPOON

THE WHITE FRUITED BANEBERRY (*Actaea alba*)

WITH IVORY WHITE FRUIT AGAINST THE DULL BACKGROUND OF AN ANCIENT WHITE OAK STUMP

805. DELPHINIUM AJACIS L.

LARKSPUR.

Bowmanville, vacant lots. (Gates)

806. ACTAEA RUBRA (Ait.) Willd. A. spicata var. Ait.

RED BANEBERRY.

Woods along north branch of Chicago River, rare. Edgebrook.
Naperville. Wheatland. (Umbach)
New Lenox, common.

807. ACTAEA ALBA (L.) Mill.

WHITE BANEBERRY.

Rich woods, Bowmanville, Niles Woods, Des Plaines River. Rare. Ravines, Glencoe and north.
Naperville. (Umbach)
In suitable places frequent in the Dunes.

808. HYDRASTIS CANADENSIS L.

ORANGE ROOT. GOLDEN SEAL. YELLOW PUCCOON.

Woods at Bowmanville and Glen Ellyn, very rare.
Abundant locally in the great Higginbotham forest at New Lexon.
Wheatland, Naperville. Three specimens. (Umbach)
Hinsdale. (Bross.) Hog Island (Brennan), as late as 1890. Rose Hill. (Johnson.) River Forest, one locality. (Hill.) Glen Ellyn. (Miss Farson)
The Bowmanville locality is now destroyed, as a suburban villa has been started here.
Requiring the richest and deepest leaf mold in dense shade. Such conditions are rapidly disappearing, so that the plant is probably destined to speedy extermination.

MAGNOLIACEAE.

MAGNOLIA FAMILY.

Trees and shrubs with large leaves usually and showy regular flowers; pistils and stamens many, the former cohering.
70 species, noted for their striking beauty of foliage and flowers. Only 1 in our district.

809. LIRIODENDRON TULIPIFERA L.

TULIP TREE. WHITE WOOD. YELLOW "POPLAR."

Sandy soils from Hammond, Ind., eastward; not common and rarely well developed. Largest specimens near Clarke, Ind. Most of the specimens are now destroyed, 1926.

ANONACEAE.

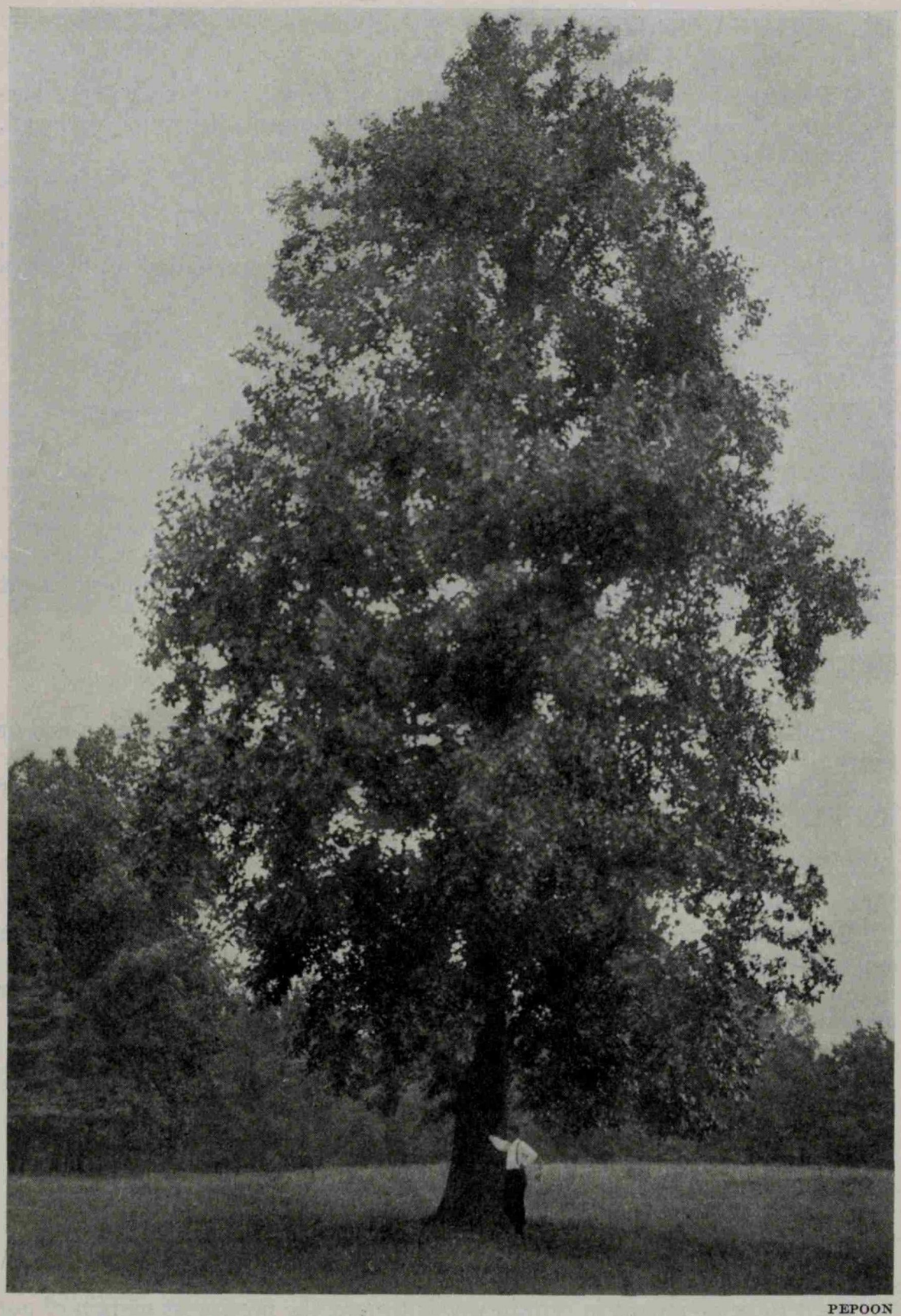
CUSTARD APPLES.

Trees or shrubs, with ample leaves; three parted flowers, valvate, hypogynous; fruit pulpy, commonly edible.
550 species, mostly tropical, with 1 in our district.



WOODRUFF

TULIP-TREE (*Liriodendron*)



PEPOON

A NINETY-FIVE-FOOT TULIP TREE AT OUR EASTERN LIMITS

810. ASIMINA TRILOBA Dunal.

PAPAW.

A few trees found near the Sag (Schantz) and a small patch near Port Chester, Ind. (Cowles) Very abundant east of Michigan City into Michigan. In woods, Wheeler. (Hill) New Lenox forest, frequent.

Mt. Forest Island, along the north margin near the canal is the nearest approach of this interesting tree to Chicago.

A grove of twenty-five trees on the bottoms of Bachelors Creek, near Orland, Cook Co. (Hill) Also along Spring Brook, Lemont, associated with Dirca palustris, or Moose-wood.

MENISPERMACEAE.

MOONSEEDS.

Woody climbers, with palmately veined leaves; perfect, hypogynous, 3-parted flowers; fruit a drupe. Largely poisonous or inimical.

150 species, mostly tropical, with 1 in our district.

811. MENISPERMUM CANADENSE L.

MOONSEED.

Thickets in rich moist soil, common. A beautiful climber, with clean bright foliage and bright olive green or brown stems.

BERBERIDACEAE.

BARBERRIES.

Shrubs or herbs, perfect hypogynous flowers; stamens few; fruit a pod or berry.

105 species, widely distributed in the north temperate zone with 6 in our district.

812. PODOPHYLLUM PELTATUM L.

MAY APPLE. MANDRAKE.

Rich woods, common; rare in the light soils southeast. Commonly much injured by the attacks of parasitic fungi.

In low rich woodlands, the fruits occasionally as large as lemons. Their fragrance is their best quality.

Some colonies have a distinctly pink tint to the flowers.

813. PODOPHYLLUM PELTATUM POLYCARPUM Clute.

MANY CARPELLED MAY APPLE.

Common in woods at Palos Park. (Clute)

814. JEFFERSONIA DIPHYLLA (L.) Pers.

TWIN LEAF.

Rich woods, Leyden, rare. (Gates)

Used to be abundant in certain woods toward the northwest margin of our area. (Hill) The station now destroyed.

In the New Lenox woods. (Fuller)



PEPOON

MAY APPLES ON A SUNNY SLOPE

THE TREES ARE BLACK AND RED OAKS

815. CAULOPHYLLUM THALICTROIDES (L.) Michx.

BLUE COHOSH.

Rich woods, north and west. Common in the Niles, Bowmanville, and Des Plaines River localities.

Naperville, Warrenville, Wheatland. (Umbach)

Tamarack Swamps, Mineral Springs.

816. BERBERIS VULGARIS L.

BARBERRY.

Rarely an escape from cultivation on roadsides, near dwellings, etc.

A large clump on banks of Thorn Creek.

The Illinois and U. S. war of extermination on this wheat-rust host has probably eliminated it from our flora.

817. BERBERIS THUNBERGII DC.

JAPANESE BARBERRY.

Occasional in the woods surrounding Edgebrook. Evidently bird-sown.

LAURACEAE.

LAURELS.

Aromatic shrubs and trees with dotted leaves and regular flowers, often dioecious; fruit a drupe.

900 species, largely tropical, with 2 in our district.

818. SASSAFRAS VARIIFOLIUM (Salisb.) Kuntze. S. officinale L.

SASSAFRAS.

Very abundant southeast in the light sandy soils; also in the woods of Winnetka, Glencoe, and Wilmette, but rare in these localities.

Occasional in the Forest Preserve at Chicago Heights.

819. BENZOIN AESTIVALE (L.) Nees. Lindera Benzoin Blume. B. Benzoin Coult.

SPICE BUSH. BENJAMIN BUSH.

Moist woods, abundant, particularly at Bowmanville. Common in marshy woods southeast. Niles woods.

ORDER 16—PAPAVERALES

Four Families, the Poppy, Mustard, Caper, and Mignonette. The first is subdivided, as in this catalog, into the Fumitory and the Poppy, by many authors, Gray being one of them.

PAPAVERACEAE.

POPPIES.

Herbs with colored juice (latex); regular two to four parted, hypogynous flowers; stamens many; fruit a capsule or pod.

60 species, widely distributed, only 5 at most in our area.

820. SANGUINARIA CANADENSIS L.

BLOODROOT.

Rich open woods along the Des Plaines and Du Page rivers. Niles woods and in the ravines along the north shore.

New Lenox woods. Chicago Heights. Lisle, Wheatland, Naperville.

Becoming increasingly more rare as the years pass.

Very easily grown in the wild gardens of the city homes.

821. ARGEMONE INTERMEDIA Sweet. A. platyceras Link and Otto.

PRICKLY POPPY.

Railroads near Miller, Ind. (Umbach) Evidently a railroad "stray," for others do not report any other plants discovered.

822. ARGEMONE ALBA Lest.

PRICKLY POPPY.

Vacant places, Ravenswood. (Gates) An escape from cultivation.

823. CHELIDONIUM MAJUS L.

CELANDINE.

Established in streets of Naperville at western limit of our area. (Umbach)

In suitable shaded places this plant will doubtless increase in numbers as it is doing throughout the eastern states.



WOODRUFF

DUTCHMAN'S BREECHES (*Dicentra Cucullaria*)

824. STYLOPHORUM DIPHYLLUM (Michx.) Nutt.

CELANDINE POPPY. WOOD POPPY.

Damp rich woods, particularly of beech. Common just beyond our eastern limit and reported by Babcock from Miller and Pine, Ind. It is doubtful whether the plant is found at the Babcock stations at the present time.

Woods at Chesterton. (Cowles)

Beech woods appear to be almost a prerequisite. In the great beech forests of southwestern Michigan, fifty miles at most distant, the plant is abundant and it is not found elsewhere.

FUMARIACEAE.

FUMITORIES.

Delicate smooth herbs with dissected leaves and irregular two to four parted flowers.

140 species, mostly north temperate, with 7 in our area.

825. FUMARIA OFFICINALIS L.

FUMITORY.

Found at Evanston and South Park. (B) Also at Naperville in alley. (Umbach)

An evident escape from cultivation.

826. ADLUMIA FUNGOSA (Ait.) Greene. A. cirrhosa Raf.

ALLEGHENY VINE.

An occasional escape from gardens, not permanent. Reported from various localities.

827. DICENTRA CUCULLARIA (L.) Bernh. Bicuculla Millsp.

DUTCHMAN'S BREECHES.

Rich open woods, common at Bowmanville. Along the Des Plaines and Du Page rivers and in the Niles woods. North branch of the Chicago River.

Rapidly approaching extermination. Does not take kindly to domesticated surroundings.

828. DICENTRA CANADENSIS (Goldie) Walp. Bicuculla Millsp.

SQUIRREL CORN.

Rare along the Des Plaines and north branch of the Chicago River.

Plentiful at Downers Grove. (Umbach)

Eastward it is commonly associated with beech and maple timber and is very abundant in such surroundings.

829. CORYDALIS SEMPERVIRENS (L.) Pers. Capnoides Adanson. C. glauca Pursh.

PALE CORYDALIS.

Several plants found on a sand ridge near East Chicago in 1895 by Prof. Hill. Reported previously from Evanston, Stony Island (1887), and Forest Hill. (Brennan) Evidently the habitat is not normal for this species as no late dates are obtainable.

830. CORYDALIS MICRANTHA (Engelm.) Gray.

SMALL-FLOWERED CORYDALIS.

On Romeo Island in the Des Plaines River, rare. (Umbach, Pepoon) Very difficult to discover as it grows, as a rule, under the dense cover of the gooseberries (Ribes gracile and R. oxycanthoides). Reported at this station by Johnson as late as 1915.

831. CORYDALIS AUREA Willd.

GOLDEN CORYDALIS.

A single specimen reported by Babcock near the I. C. Ry. at the Calumet. Evidently a waif. It needs a rocky habitat for growth and this exclusiveness seems normal, for in all Jo Daviess Co., the writer found only one specimen, perfectly at home on its rock surroundings.

KEY TO THE PLANTS OF THE MUSTARD FAMILY

A	Plants with leaves almost or entirely from the root	B	
A	Plants with conspicuously leafy stems	E	
A	Plants with stems leafless below, 3-divided leaves above; flowers large, white	Pepper Root	879
B	Leaves undivided, toothed or entire	C	
B	Leaves pinnatifid or compound	D	
C	Leaves all from root, ovate, hairy; flowers very small, white; petals cleft	Whitlow Grass	833
C	Leaves mostly near root, ovate, hairy; flowers very small, white; petals entire	Carolina Whitlow Grass	832
D	Leaves pinnately compound of 5–7 broad leaflets; flowers very small, white; pods long	Hairy Bitter Cress	883
D	Leaves lyrate pinnatifid, those on stem few, narrow; flowers small, white	Sand Cress	886
E	Flowers white or greenish-white	J	
E	Flowers purplish	F	
E	Flowers yellow in light or dark tints	Z	
F	Plants smooth or nearly so	G	
F	Plants more or less hairy, hispid or hirsute	H	
G	Plants diffusely spreading, fleshy; flowers very small; growing only in sand	Sea Rocket	847
G	Plants not as above, erect; leaves oblong, toothed or base often lobed, sessile or clasping	False Rocket	878
H	Basal leaves round-cordate, angular lobed or entire; flowers showy; early spring	Purple Spring Cress	881
H	Basal leaves not thus; flowers large, showy	I	
I	Flowers pink; leaves lyrate pinnatifid	Radish	849
I	Flowers deep violet purple; leaves broad lanceolate, toothed; flowers fragrant, nocturnal	Dame's Violet	865
J	Plants smooth or nearly so	K	
J	Plants evidently hairy or rough but not hoary	V	
J	Plants hoary (grayish rough or hairy); leaves lance-entire; flowers very small	H Hoary Alyssum	835
K	Flowers large	L	
K	Flowers small	N	
L	Growing in water; water leaves dissected, divisions filiform; air leaves lance, toothed	River Cress	875
L	Growing in moist places—not as above	M	
M	Leaves simple, toothed, small; flowers in showy terminal cluster	Spring Cress	880
M	Leaves very large, coarse, oblong, often lobed or much divided, toothed	Horse Radish	874
M	Leaves small, compound, of 7–15 broad or narrow leaflets, the basal leaves larger	Cuckoo Flower	882
N	Plants not growing in water	O	

N	Plants growing in water; leaves of 3–9 oval leaflets	Water Cress	868
O	Flowers greenish-white; plant tall with glaucous, arrow-clasping lance leaves	Smooth Bank Cress	891
O	Flowers small, pink tinted; leaves narrow, clasping	Drummond's Cress	888
O	Flowers small, pure white	Q	
Q	Leaves pinnately compound	R	
Q	Leaves not pinnately compound but often deeply divided	S	
R	Leaf segments oblong or oval, toothed	Pennsylvania Cress	885
R	Leaf segments linear, entire	Small Flowered Cress	884
S	Leaves nearly all pinnatifid or pinnately lobed	T	
S	Leaves nearly all toothed, some sinuate	U	
T	Leaf segments usually 11 or less, much toothed	Pepper Grass	840
T	Leaf segments usually more than 11, little or not toothed	Virginia Rock Cress	889
U	Upper leaves clasping by auricled base, oblong, dentate; fruit large, flat	Penny Cress	837
U	Upper leaves sessile, lance or oblong, dentate; fruit small	Virginia Pepper Grass	838
V	Plant soft downy; leaves oblong, clasping, nearly entire, auricled	Field Cress	841
V	Plant not thus	W	
W	Lower leaves deeply lobed, in a rosette; upper leaves auricled, narrow, toothed	Shepherd's Purse	843
W	Lower leaves entire or toothed	Y	
Y	Leaves lance or linear, minutely hairy, almost entire	Sweet Alyssum	834
Y	Leaves oblong toothed; plant stiff hairy below	Mouse Ear Cress	864
Z	Flowers comparatively large, ½″ or so	a	
Z	Flowers small, ¼″ or so	h	
a	Plants smooth or nearly so	d	
a	Plants more or less hairy	b	
b	Leaves compound, end segment large, lateral small; hairs stiff, spreading	White Mustard	850
b	Leaves more or less pinnatifid, often nearly smooth	c	
b	Leaves toothed, sinuate or somewhat lobed, hispid with scattered hairs	Charlock	851
c	Flowers all yellow	Black Mustard	853
c	Flowers purple veined	Wild Radish	848
d	Leaves oblong, cordate, clasping, entire	Hare's Ear	858
d	Leaves more or less pinnatifid	e	
e	Plant and leaves glaucous	f	
e	Plant and leaves not glaucous, variously toothed, lobed or pinnatifid	Indian Mustard	852
f	All the leaves pinnatifid; flowers nearly ½″	Wall Rocket	857
f	The upper leaves lance-sessile, clasping by auricled base	g	
g	With a few scattering hairs, at least when young	Ruta Baga	856
g	Very smooth and pale at all times	Rape	854

h	Leaves compound	i	
h	Leaves simple	k	
i	Leaves densely hoary, twice pinnatifid; flowers very small	**Tansy Mustard**	**863**
i	Leaves not as above, pinnate	j	
j	Flowers ⅓″, conspicuous; leaf segment coarsely sharp toothed	**Yellow Water Cress**	**869**
j	Flowers very small, ⅛″; leaf segment slightly wavy toothed	**Blunt Leaved Yellow Cress**	**871**
k	Leaves merely toothed or entire	l	
k	Leaves more or less pinnatifid	p	
l	Leaves linear-oblong, hoary; flowers cream-yellow, very small	**Hoary Alyssum**	**835**
l	Plant not as above	m	
m	Leaves sessile, lanceolate, not clasping, rough, pubescent; flowers small	**Wormseed Mustard**	**866**
m	Leaves sessile, clasping by sagittate base	n	
n	Whole plant smooth; leaves lanceolate-entire; fruit oblong	**False Flax**	**844**
n	Whole plant hairy	o	
o	Stem somewhat hairy; fruit ovoid	**False Flax**	**845**
o	Stem densely rough hairy; fruit globular	**Ball Mustard**	**846**
p	More or less hairy	q	
p	Smooth	r	
q	With rigid spreading branches, often nearly smooth; waste places	**Hedge Mustard**	**859**
q	Not thus branched, covered with long hairs; wet places	**Hispid Yellow Cress**	**873**
r	Plant pale, more or less glaucous; flowers very pale; leaf-lobes similar	**Tall Hedge Mustard**	**861**
r	Plant pale, more or less glaucous; flowers very pale; terminal leaf-lobe large	**Tall Hedge Mustard**	**862**
r	Plants not pale; flowers bright yellow	s	
s	Pods or fruits short, about ¼″ long	t	
s	Pods or fruits elongate, about 1″ long	u	
t	Leaf divisions many, 11–17, little toothed; plant erect	**Marsh Cress**	**872**
t	Leaf divisions fewer, 7–11, much toothed; plant diffuse	**Spreading Cress**	**870**
u	Pods erect, closely pressed to stem	**Winter Cress**	**876**
u	Pods spreading	**Winter Cress**	**877**

CRUCIFERAE.

MUSTARDS.

Herbs, with biting juice, four parted, hypogynous flowers, six stamens and a two-celled ovary.

Many ornamental flowers and vegetables are furnished by this family.

1500 species of wide distribution, with 61 in our area.

832. DRABA CAROLINIANA Walt.

CAROLINA WHITLOW GRASS.

Sandy soils adjacent to Graceland, abundant locally. Generally distributed but very local.

Warrenville, Du Page Co., on gravelly hill. (Umbach) Probably the only station in the county.

Evanston. Calumet. South of Calumet. (Babcock) University Campus, Chicago. (Bastin)

Leaves often toothed; petals emarginate; Stony Island. Petals wanting in later racemes; Englewood. (Hill)

833. DRABA VERNA L.

WHITLOW GRASS.

Dry sandy soil near Evanston. Reported at long intervals. The plant seems to have, for any given locality, periods of annual rest or aestivation. A patch observed for ten years was found to have four seasons when it bloomed freely and the remaining years either no plants were seen or there were but scattering specimens.

West Chicago, frequent. (Umbach)

The whole plant is often so diminutive that it is easily overlooked.

834. LOBULARIA MARITIMA (L.) Desv. Koniga maritima (L.) R. Br.

SWEET ALYSSUM.

Occasional in vacant lots.

835. ALYSSUM ALYSSOIDES L. A. calycinum L.

HOARY ALYSSUM.

On the M. C. Ry. south of Clarke; abundant locally. (Umbach)

836. LESQUERELLA NUTTALLII Wats.

BLADDER-POD.

Near Alton Ry. at Rock Bridge. Two plants in 1894. (Hill) Doubtless an immigrant from the west. Not found since.

837. THLASPI ARVENSE L.

PENNY CRESS.

Sandy soil near Waukegan, 1909. (Umbach) Occasional along all railroads. A pernicious weed in Canadian territory. Rapidly extending in area.

838. LEPIDIUM VIRGINICUM L.

PEPPER GRASS.

Common everywhere in open dry situations. This plant is rapidly assuming the habit and form of a tumble weed.

839. LEPIDIUM SATIVUM L.

GARDEN CRESS.

Spontaneous in ditches at Englewood. (Hill)

840. LEPIDIUM APETALUM Willd. L. intermedium Man. 6th Ed.

PEPPER GRASS.

Dry sandy fields and railways, frequent; becoming common eastward.

841. LEPIDIUM CAMPESTRE (L.) R. Br.

FIELD CRESS.

Waste places near Chicago, occasional. Along the railroads the plant is more common.

842. ISATIS TINCTORIA L.

WOAD.

Collected by John Higgins at Western Ave. stone quarries in 1893. Almost certainly a stray. Seemingly extinct at present.

843. CAPSELLA BURSA-PASTORIS (L.) Medic. Bursa Bursa-pastoris (L.) Brit.

SHEPHERD'S PURSE.

Everywhere common along roads, streets and about dwellings. Our second most common weed, dandelion being easily the first in abundance.

844. CAMELINA SATIVA (L.) Crantz.

FALSE FLAX.

Along railways, frequent. Also occasional in fields.

845. CAMELINA MICROCARPA Andrz.

SMALL-FRUITED FALSE FLAX.

Wabash Ry. at Miller, Ind. (Hill) B. & O. Ry. at Calumet Heights, now Gary. (Umbach)

846. NESLIA PANICULATA (L.) Desv.

BALL MUSTARD.

First appeared on Penn. Ry. near Clarke, Ind. in 1894. (Moffatt) Very abundant for some years, now rarely seen. Seemingly not a permanent introduction. Not found at its original station.

847. CAKILE EDENTULA (Bigel.) Hook. C. americana Nutt.

SEA ROCKET.

Shores of Lake Michigan, common. Abundant on the shifting sand dunes of the southeast. One of the last flowers of late Autumn, found as late as Nov. 10.

Occasional on the sands of the north shore.

848. RAPHANUS RAPHANISTRUM L.

WILD RADISH. JOINT CHARLOCK.

Penn. Ry. at Clarke Junction, abundant in 1895. Since rarely seen or vanished.

About this date seems to have witnessed a number of reports of transient plants, most of which have not been found of late years.

849. RAPHANUS SATIVUS L.

RADISH.

Occasional along roads, streets and in vacant lots.

850. BRASSICA ALBA (L.) Boiss. Sinapis alba L.

WHITE MUSTARD.

Pine and Miller, Ind., frequent. (Umbach)

Probably more general but overlooked.

851. BRASSICA ARVENSIS (L.) Kuntze. B. sinapistrum Boiss.

CHARLOCK.

Streets, roadsides and railways, frequent. Becoming gradually more common.

852. BRASSICA JUNCEA (L.) Cosson.

INDIAN MUSTARD.

Penn. Ry. near Clarke Junction, rare.

853. BRASSICA NIGRA (L.) Koch.

BLACK MUSTARD.

Fields and waste places, becoming excessively abundant locally. A weed of grain fields, many oat fields of northern Illinois appearing like gold when the weed is in bloom.

854. BRASSICA NAPUS L.

RAPE.

Common along railways, evidently the seed dropped from stock cars. Found every season.

855. BRASSICA RAPA L.

TURNIP.

Like the next, occasionally appearing as a temporary waif.

856. BRASSICA CAMPESTRIS L.

RUTA BAGA.

Waste places, occasional; especially in the neighborhood of market garden fields.

857. DIPLOTAXIS MURALIS (L.) DC.

WALL ROCKET.

In vacant lots near Hamilton Park, gradually spreading. (1912, Hill)

858. CONRINGIA ORIENTALIS (L.) Dumort. C. perfoliata Link.

HARE'S-EAR MUSTARD.

Along railroads, Lisle, 1897. Dune Park, 1900. Naperville, 1912. (Umbach) Abundant on C. R. I. & P., New Lenox, 1921.

859. SISYMBRIUM OFFICINALE (L.) Scop. Erysimum officinale L.

HEDGE MUSTARD.

Common in waste places. Abundant along roadways and in vacant lots.

860. SISYMBRIUM OFFICINALE LEIOCARPUM DC. Sisymbrium Scop.

HEDGE MUSTARD.

In locations similar to the species and probably as common.
Not recognized as distinct by Britton and Brown.

861. SISYMBRIUM ALTISSIMUM L. Norta altissima (L) Brit.

TUMBLE MUSTARD. TALL HEDGE MUSTARD.

Appeared first some two or three years later than Neslia, 1896 or '97 on railway near Miller. (Babcock) Now fairly common in vacant places and roadways, Chicago and vicinity, and rapidly extending its range. Many acres of waste lands near Gary are completely overgrown with it. Assuming the habit of a tumble weed. In many places in the Northwestern states it is a bad weed.

862. SISYMBRIUM IRIO L.

TALL HEDGE MUSTARD.

On C. & A. Ry. west of Halsted St. found by Robt. Bebb for a number of years. Probably now extinct, as no recent reports give it.

863. SISYMBRIUM CANESCENS Nutt. Sophia pinnata (Walt.) Haw.

TANSY MUSTARD.

Limestone cliffs at Lemont, certainly native. (Hill) Also at Hegewisch and Miller, Ind.

Railroad right of way, Wheaton. (Moffatt) Naperville. (Umbach) On the Belt Ry. south of Summit.

864. SISYMBRIUM THALIANUM (L.) J. Gay. Arabodopsis Thaliana (L.) Brit.

MOUSE-EAR CRESS.

Sandy flats near Whiting, Ind. (Higley)

865. HESPERIS MATRONALIS L.

DAME'S ROCKET. DAME'S VIOLET.

Along the drainage canal, Willow Springs. (Moffatt)
On the Waukegan highway north of Niles. Winnetka on side streets.
Spreads rapidly in cultivation but is a worthwhile addition to the garden.

866. ERYSIMUM CHEIRANTHOIDES L. Cheirinia cheiranthoides (L.) Link.

WORMSEED MUSTARD.

Low grounds along the Chicago River, common. Des Plaines and Du Page rivers. (Umbach)

867. ERYSIMUM ASPERUM DC. Cheirinia aspera (DC.) Brit.

WESTERN WALL FLOWER.

Along the Illinois and Michigan canal at Romeo. (Umbach)
C. R. I. & P. near New Lenox (1921)

868. RADICULA NASTURTIUM-AQUATICUM (L.) Sisymbrium nasturtium-aquaticum L.

WATER CRESS.

Cold spring brooks. Des Plaines and Du Page rivers. North branch of the Chicago River.

869. RADICULA SYLVESTRIS (L.) Druce.

YELLOW CRESS.

Common along Salt Creek, north of La Grange. Near Des Plaines River from Riverside south and along the railways. (Hill) Abundant locally. Salt Fork. Elmhurst to Des Plaines. (Moffat) Also along the drainage canal. Common in ditches north of Edgebrook.

870. RADICULA SINUATA (Nutt.) Greene.

SPREADING YELLOW CRESS.

Along the C. B. & Q. Ry. at Naperville. (Umbach)

871. RADICULA OBTUSA (Nutt.) Greene.

BLUNT LEAVED YELLOW CRESS.

Along the Salt Creek and Du Page River. Des Plaines River valley. North branch of the Chicago River.

872. RADICULA PALUSTRIS (L.) Moench.

MARSH CRESS.

Very common in low places, especially in muddy flats.

873. RADICULA PALUSTRIS HISPIDA (Desv.) Rob.

ROUGH YELLOW CRESS.

Wet places, infrequent. (B. P.) Hyde Park and south.

874. RADICULA ARMORACIA (L.) Rob. Armoracia Armoracia (L.) Brit.

HORSERADISH.

Low grounds about dwellings and in ditches, common.

Everywhere an occasional resident and thoroughly at home.

875. RADICULA AQUATICA (A. A. Eaton) Rob. Neobeckia aquatica (A. A. Eaton) Brit.

LAKE CRESS. RIVER CRESS.

Babcock says "rare." Bastin found it from '75 to '87 in the south branch of the Chicago River, no locality stated.

Des Plaines River north of Romeo. (Pepoon, Umbach) Probably along this stream more generally.

876. BARBAREA VULGARIS R. Br. B. barbarea (L.) MacM.

WINTER CRESS. YELLOW ROCKET. BITTER CRESS.

Very common along the Chicago River, north branch, in many places tinting the surface yellow by its abundant bloom in early Spring.

877. BARBAREA STRICTA Andrz.

WINTER CRESS.

Wet ground along Hickory Creek. Mokena. (Hill)

878. IODANTHUS PINNATIFIDUS (Michx.) Steud.

VIOLET CRESS. FALSE ROCKET.

Damp woods near Des Plaines River at River Forest. (Mrs. Agnes Chase) Romeo Island. (Pepoon) Naperville, near river. (Umbach)

879. DENTARIA LACINIATA Muhl.

PEPPER-ROOT. TOOTHWORT.

Common in rich woods, Chicago and Des Plaines rivers. Niles woods. Low woods southeast.

The spicy rhizomes are much relished by country youngsters.

880. CARDAMINE BULBOSA (Schreb.) B.S.P. C. rhomboidea DC

SPRING CRESS.

Common in marshes, especially those that are open and grassy.

Wet open woods at Edgebrook.

One of the few native showy species.

881. CARDAMINE DOUGLASSII (Torr.) Brit. C. purpurea (Torr.) Brit.

PURPLE SPRING CRESS.

Very common in moist rich woods throughout.

One of the earliest flowers forming large areas of bloom. A showy plant when well developed.

882. CARDAMINE PRATENSIS L.

CUCKOO FLOWER. MEADOW BITTER CRESS.

Common in marshes of Great Calumet. Clarke, Ind. (Umbach) South of Tolleston on the Little Calumet.

883. CARDAMINE HIRSUTA L.

HAIRY BITTER CRESS.

Wet places, generally confounded with C. pennsylvanica, growing in similar localities.

884. CARDAMINE PARVIFLORA L.

SMALL-FLOWERED BITTER CRESS.

In the dry woods, at Thornton, Ill. (Hill) Frequent, 1898. Mokena, on clay soil in dry woods. (Hill)

885. CARDAMINE PENNSYLVANICA Muhl.

PENNSYLVANIA BITTER CRESS.

Common along ditches, muddy river banks and ponds. Romeo to Riverside and probably north.

886. ARABIS LYRATA L.

SAND CRESS. ROCK CRESS.

Abundant in sand near Lake Michigan and never far from that body of water.

887. ARABIS DENTATA T. & G.

TOOTHED CRESS.

Common in woods near the Des Plaines River. Also at Bowmanville and in the Niles woods. North branch of the Chicago River. Very common in the New Lenox woods.

888. ARABIS DRUMMONDI Gray.

DRUMMOND'S CRESS.

Sandy bank in the shade, north, Evanston and elsewhere. Infrequent or overlooked.

New Lenox, along the bluffs of Hickory Creek.

889. ARABIS VIRGINICA (L.) Trel.

VIRGINIA ROCK CRESS.

Open woods, North Evanston and Wilmette. (Raddin, 1893)

Railroad at Clarke, 1896. (Umbach)

890. ARABIS HIRSUTA Scop.

HAIRY ROCK CRESS.

In sandy soil. Reported from Evanston, Hyde Park, Riverside. (Bastin) Grand Crossing. (Hill) Naperville, Wheatland. (Umbach)

891. ARABIS LAEVIGATA (Muhl.) Poir.

SMOOTH BANK CRESS.

Common on wooded, steep banks throughout. Emphatically a shade plant, hence "prairies not common" of Higley and Raddin Ed. is a peculiar expression.

892. ARABIS CANADENSIS L.

SICKLE-POD.

Steep wooded sand hills southeast; common locally. Dune Park, Miller. Naperville. (Umbach) Woods at Willow Springs.

CAPPARIDACEAE.

CAPERS.

Herbs mostly, similar to the mustards but with six or more stamens not in two sets. Pod without partitions.

400 species, mostly of warm regions, with 4 in our district.

893. POLANISIA GRAVEOLENS Raf.

CLAMMY-WEED.

Gravelly shores and washes, somewhat common. Along railways in gravel ballast.

894. POLANISIA TRACHYSPERMA T. & G.

LARGE CLAMMY-WEED.

Brighton Park, 1896. (Umbach) Evidently introduced. Not certainly found of late or else confused with the last species.

Later study makes this species the ordinary plant of our region.

895. CLEOME SERRULATA Pursh.

CLEOME. SPIDER FLOWER. STINKING CLOVER.

Along railroads, rare. Escaped near gardens, occasional.

An exceedingly abundant roadside plant of Nebraska and Colorado all the way to the Rocky Mountains.

896. CLEOME SPINOSA L.

SPIDER FLOWER.

Often cultivated and now and then an escape.

RESEDACEAE.

MIGNONETTE FAMILY.

Herbs with unsymmetrical flowers, often weedy and of little importance.

897. RESEDA ALBA L.

DYER'S ROCKET.

Waste ground at Naperville; a few specimens. (Umbach)

ORDER 17—SARRACENIALES

THE INSECT CATCHERS.

Two Families, the Pitcher Plant and the Sundew. The former has 10 species, all American, and the latter 125.

Bog herbs, insectivorous.

SARRACENIACEAE.

PITCHER PLANTS.

Bog herbs with the leaves variously modified into insect traps, in the form of liquid-containing pitchers.

10 species, all American, with 1 in our district.

898. SARRACENIA PURPUREA L.

PITCHER PLANT.

Bogs from Clarke Junction eastward. Rare in our range, rapidly becoming exterminated.

Originally as far west as Whiting.

Rogers Park. (Higley and Raddin)



PEPOON

A MARSH NOOK IN MAY

PITCHER PLANT (*Sarracenia purpurea*)



WOODRUFF

ROUND-LEAVED SUNDEW (*Drosera rotundifolia*)



PEPOON

A MARSH NOOK IN LATE SEPTEMBER

FRINGED GENTIAN PINK SABATIA LADIES' TRESSES

DROSERACEAE.

SUNDEWS.

Bog herbs with ephemeral flowers and with leaves variously modified into insect traps but not pitcher forms.

125 species, widely distributed, with 2 in our district.

899. DROSERA ROTUNDIFOLIA L.

SUNDEW.

Bogs, particularly on rotten wood. Clarke, Tolleston and east.

Exceedingly abundant locally in sandy ditches bordering some of the southeastern railroads. On the South Shore Line east of Dune Park and on the Erie Ry. near Hammond.

900. DROSERA LONGIFOLIA L. D. intermedia Hayne.

SUNDEW.

Bogs at Dune Park and eastward. Very much more abundant than the preceding. Often grows in shoal water and overlooked or in dense growths of various sedges. In such situations the leaves are elongated and as the water recedes recline on the mud. (Hill)

In peaty bog near Berwyn. (Hill)

ORDER 18—ROSALES

THE ROSE ALLIES.

Seventeen Families, the Riverweed, Orpine, Penthorum, Parnassia, Saxifrage, Hydrangea, Itea, Gooseberry, Witch-Hazel, Plane Tree, Rose, Apple, Prune, Mimosa, Cassia, Krameria, and Pea.

Many botanists place all from the Parnassia to Gooseberry families in the Saxifrage Family; the Rose, Apple, and Prune families in the Rose Family, and the Mimosa, Cassia, and Krameria families in the Pea Family.

PODOSTOMACEAE.

RIVER WEEDS.

901. PODOSTEMUM CERATOPHYLLUM Michx.

RIVER WEED.

In slow shallow streams. Generally overlooked.

CRASSULACEAE.

ORPINES. STONECROPS.

Succulent herbs with symmetrical flowers, otherwise as in the Saxifrage Family.

500 species, with 2 with us.

902. SEDUM ACRE L.

MOSS STONECROP.

Abundant in Graceland Cemetery, well established. Along the Illinois and Michigan canal at Romeo. (Umbach)

903. SEDUM PURPUREUM Tausch. S. Telephium (Haw.) F. Gray

LIVE-FOR-EVER. ORPINE.

Roadsides and occasional near dwellings.

904. SEDUM TERNATUM Michx.

WILD STONECROP.

Not in our district but so near it is admitted. Abundant on the cliffs of the Kankakee River near Bourbonnais.

PENTHORACEAE.

THE DITCH STONECROPS.

Ditch or bog plants of little note.

A single genus with three species, one in our district.

905. PENTHORUM SEDOIDES L.

DITCH STONECROP.

Ditches and swamps, common.

SAXIFRAGACEAE.

SAXIFRAGES. THE ROCK LOVING PLANTS.

Herbs or shrubs, nearly allied to the Rose Family but usually with exstipulate leaves and definite stamens; epigynous.

732 species, widely distributed, with 14 in our district.

906. SAXIFRAGA PENNSYLVANICA L. Micranthes pennsylvanica (L.) Haw.

SWAMP SAXIFRAGE.

Open marshes, particularly along the Grand Calumet, common. Exceedingly abundant on the wet sandy flats of the Little Calumet River south of Tolleston, Ind.

At New Lenox and other southwestern stations, found commonly in moist woods.

Wet woods at Niles and north.

907. HEUCHERA AMERICANA L.

ALUM ROOT.

Damp shaded banks, Glencoe, Riverside, Englewood. Rare. (Babcock)

Apparently not found by recent collectors.

908. HEUCHERA HISPIDA Pursh.

ALUM ROOT.

Dry open knolls and prairies, common throughout. More abundant north and west.

909. MITELLA DIPHYLLA L.

BISHOP'S CAP. MITREWORT.

Rich woods, particularly partial to decaying logs. Niles, Des Plaines valley Bowmanville.

910. MITELLA NUDA L.

SMALL BISHOP'S CAP.

In tamarack swamps in the Dune region. Rare or confounded with the preceding.

Mineral Springs, common.

911. CHRYSOSPLENIUM AMERICANUM Schwein.

GOLDEN SAXIFRAGE. WATER CARPET.

Cold wet woods, occasional. Particularly suitable places are the springy bogs of the southeastern portion of our area. Often almost concealing the small brooklets with its luxuriant growth.

912. PARNASSIA CAROLINIANA Michx.

GRASS OF PARNASSUS.

Bogs, common. One of our latest Autumn flowers.

Exceedingly abundant near Dead River on the Waukegan Moorland.

RIBES AND GROSSULARIACEAE of Britton and Brown; RIBES of Gray.

CURRANTS AND GOOSEBERRIES.

These shrubs are more properly placed in a separate family, the Grossulariaceae.

913. RIBES CYNOSBATI L. Grossularia cynosbati (L.) Mill.

PRICKLY GOOSEBERRY.

Wooded banks of north shore. Des Plaines River. Calumet River. Not common. At home on steep banks, bluffs and rocky cliffs. Fruit too prickly for enjoyable eating.

914. RIBES GRACILE Michx. Grossularia missouriensis (Nutt) Cov. & Brit.

WILD GOOSEBERRY.

Wet soils and in woodlands. Common. "Probably all so-called R. rotundifolium belongs here." (Hill)

Common on Romeo Island and in wet woods of the Des Plaines River.

915. RIBES ROTUNDIFOLIUM Michx. Grossularia rotundifolia (Michx.) Cov. & Brit.

WILD GOOSEBERRY.

Woods along east fork of the Du Page River near Lisle, frequent. (Umbach) See last species. Of doubtful occurrence with us.

916. RIBES OXYACANTHOIDES L. Grossularia oxyacanthoides (L.) Mill.

WILD GOOSEBERRY.

Wet woods, Bowmanville and elsewhere. Rather common.

917. RIBES FLORIDUM L'Her.

WILD BLACK CURRANT.

Common in woods. Very variable as to character of fruit.

918. RIBES VULGARE Lam. R. rubrum Man. 6th Ed.

RED CURRANT.

Wet woods, Bowmanville. Rare as an escape. Cold swamps southeast, occasional.

919. RIBES TRISTE Pall. R. rubrum subglandulosum Max.

SWAMP RED CURRANT.

A number of bushes found in the woods at Riverdale in 1892. (Hill) No other record.

HAMAMELIDACEAE

THE WITCH-HAZELS

Trees or shrubs, cosmopolitan, with 40 species and 1 in our area.

1904.* HAMAMELIS VIRGINIANA L.

WITCH-HAZEL.

Common on wooded banks and hillsides. Especially abundant southeast and in the ravines of the north shore.

Blooms abundantly in October and November.

The explosive capsule "fires" its seeds 30 feet sometimes.

PLATANACEAE.

PLANE TREES.

Trees with ample stipulate, palmate-veined leaves, and monoecious flowers in heads; destitute of calyx and corolla.

1 genus of 7 species, 1 only in our limits.

920. PLATANUS OCCIDENTALIS L.

SYCAMORE. BUTTONWOOD.

Along the Calumet at Miller, Ind. In the Des Plaines River valley at Romeo. Nowhere a common tree, lacking suitable physiographic locations for favorable growth.

ROSACEAE.

ROSES AND THE NEAR RELATIVES.

Plants of various habit with alternate leaves and five parted flowers; stamens numerous; ovary commonly inferior, but many exceptions; styles one to indefinite. Many valuable fruits and ornamental plants.

About 1200 species, with 94 in our district.

921. PHYSOCARPUS OPULIFOLIUS (L.) Maxim. Opulaster (L.) Kuntze.

NINE-BARK. HARDHACK.

Banks, particularly abundant along the Des Plaines, the ravines of the north shore and the sand ridges southeast. Common in cultivation.

922. PHYSOCARPUS OPULIFOLIUS INTERMEDIUS (Rydb.) Rob.

INTERMEDIATE NINE-BARK.

With the species in similar locations and generally not distinguished from it.

923. SPIRAEA LATIFOLIA Borkh.

MEADOW-SWEET.

Overlapping in territory with the next, which is our common species.

924. SPIRAEA ALBA. Du Roi. S. salicifolia of Gray.

Spiraea salicifolia is a pink Asiatic species according to Britton and Brown.

Common in low prairie marshes. Source of several cultivated varieties.

Found also in the Dunes where it merges into the preceding species.

*Number overlooked in first count.

925. SPIRAEA TOMENTOSA L.

HARDHACK. STEEPLE BUSH.

Common in moist sandy soils southeast. White forms are found occasionally.

926. PYRUS COMMUNIS L.

PEAR.

Several small and thrifty trees have been found near the Penn. and Lake Shore Rys. in Indiana. Pears, apples, plums, cherries, and peaches are being introduced along railways by the traveler discarding core or pit from the car window.

927. PYRUS CORONARIA L. Malus coronaria (L.) Mill.

WILD CRAB.

Thickets throughout. So reported by many but in all probability it is the next species so found.

928. PYRUS IOENSIS (Wood.) Bailey. Malus ioensis (Wood.) Brit.

WILD CRAB.

Common at Willow Springs and Chicago Heights.

West of Chicago. Abundant along the Du Page. (Umbach). The two species are commonly confused. This species has given rise to a very fine cultivated form, Bechtel's Crab.

The aromatic fruits are very fine for jelly.

Very variable in size of fruit. Willow Springs specimens reach 2 inches in diameter.

929. PYRUS SOULARDI Bailey.

SOULARD'S CRAB.

A tree found in the Willow Springs Forest Preserve by O. M. Schantz, possesses all the features of this hybrid between the apple and the Iowa crab.

930. PYRUS MALUS L. Malus malus (L.) Brit.

APPLE.

Occasional especially near railways. Rather a common occurrence in woods at Clarke, Ind. Will soon be common form from accidental sowings of dropped cores. Occasional trees are found producing fair quality fruits.

931. PYRUS BACCATA L. Malus baccata (L.) Borkh.

SIBERIAN CRAB.

A very rare escape from cultivation at our extreme eastern limits and occasional in southwest Michigan.

932. PYRUS ARBUTIFOLIA (L.) L.f. Aronia arbutifolia (L.) Ell.

RED CHOKEBERRY.

Goose Lake near Dune Park, growing with P. melanocarpa. (Hill)

The variety is more common in all probability.



PEPOON

THE JUNEBERRY (*Amelanchier*) ON A SUNNY BANK IN APRIL

933. PYRUS ARBUTIFOLIA (L.) L.f. Var. atropurpurea (Brit.) Rob.

PURPLE CHOKEBERRY.

Common in marshes southeast.

934. PYRUS MELANOCARPA (Michx.) Willd. Aronia nigra Brit.

BLACK CHOKEBERRY.

Moist woods at Bowmanville and southeast. Common in the latter station. The Bowmanville area is destroyed.

935. PYRUS AMERICANA (Marsh.) DC. Sorbus americana Marsh.

MOUNTAIN ASH

Woods of North Shore, Wilmette, Waukegan. (Pepoon, Umbach). Rare. Glencoe. (Johnson)

Very likely the plants here found are bird-sown as there are many examples of this species on North Shore estates. Found in the woodland depths, however, in normal natural surroundings.

936. AMELANCHIER CANADENSIS (L.) Medic.

JUNEBERRY. SHAD BUSH.

Very common on wooded banks and steep ravine slopes north and southeast. An occasional tree a foot in diameter and forty feet high. The fruits are variable but at times large and well flavored.

937. AMELANCHIER OBLONGIFOLIA (T. & G.) Roem. A. intermedia Spach.

JUNEBERRY.

Frequent on wooded banks. Of questionable occurrence.

938. AMELANCHIER SPICATA (Lam.) Koch. A. canadensis rotundifolia Michx.

SPICATE JUNEBERRY.

Babcock says, "with A. canadensis but infrequent." No one of late seems to find this plant. It is characteristically northern.

CRATAEGUS.

HAWTHORNS.

NOTE:—In the opinion of the author there is much unwarranted manufacture of species in this genus. Like the apple, Pyrus malus, we have here a genus in which the new plants never come exactly "true" to the parent form from seed. The fruits of the haws do not differ as much as do "seedling" apples, all conceded to be one species, but in Crataegus they are, at once, called different forms, and are named accordingly.

In Gray, 1st Ed., 1848, six species are named (native); in the 5th Ed., 1887, eight are given; in Wood's Class Book, 1880, there are thirteen; in Gray, 6th Ed., 1890, eight species; in Britton's Flora, 1905, thirty are listed; in Sargent, the same year for the same Area, there are sixty-three; in Gray, 7th Ed., 1908, there are sixty-four; in Britton & Brown, 1913, there are seventy-two. All for the northeastern United States.

Twenty-five are listed here.

Britton & Brown in the 1913 Ed., say, "Data are fast accumulating, tending to show that many of these newly described species are hybrids."

The genus has been elaborated by Prof. Hill, who had the counsel of Prof. Sargent and other authorities.

The numbers in ( ) refer to Gray's Manual, 7th Ed.

939. CRATAEGUS OXYACANTHA L. (1)

ENGLISH HAWTHORN.

Glencoe. Doubtless an escape. (Cowles)

940. CRATAEGUS CRUS-GALLI L. (2)

COCK-SPUR THORN.

Along the Calumet River near Clarke, Ind.
Along the Du Page River near Naperville.
Common in the Salt Creek country.

941. CRATAEGUS PUNCTATA AUREA Ait. (8)

YELLOW HAW.

Very common form at Bowmanville and along the Chicago River. On the Des Plaines River and general.

942. CRATAEGUS PUNCTATA RUBRA Ait. (8)

With the form aurea equally common, except locally where C. aurea predominates, as at Bowmanville and Edgebrook.

943. CRATAEGUS MARGARETTA Ashe. C. Brownii Britton. (11)

Wet woods at Bowmanville. (Gates)

944. CRATAEGUS TOMENTOSA L. (21)

Sandy soils about Lake Michigan, frequent.

945. CRATAEGUS ROTUNDIFOLIA Moench. C. glandulosa Ait. C. coccinea rotundifolia Sarg. (28)

Woods near Chicago.

946. CRATAEGUS LUCORUM Sarg. (33)

Woods at Barrington. (Hill.) Banks of Thorn Creek. (Hill)

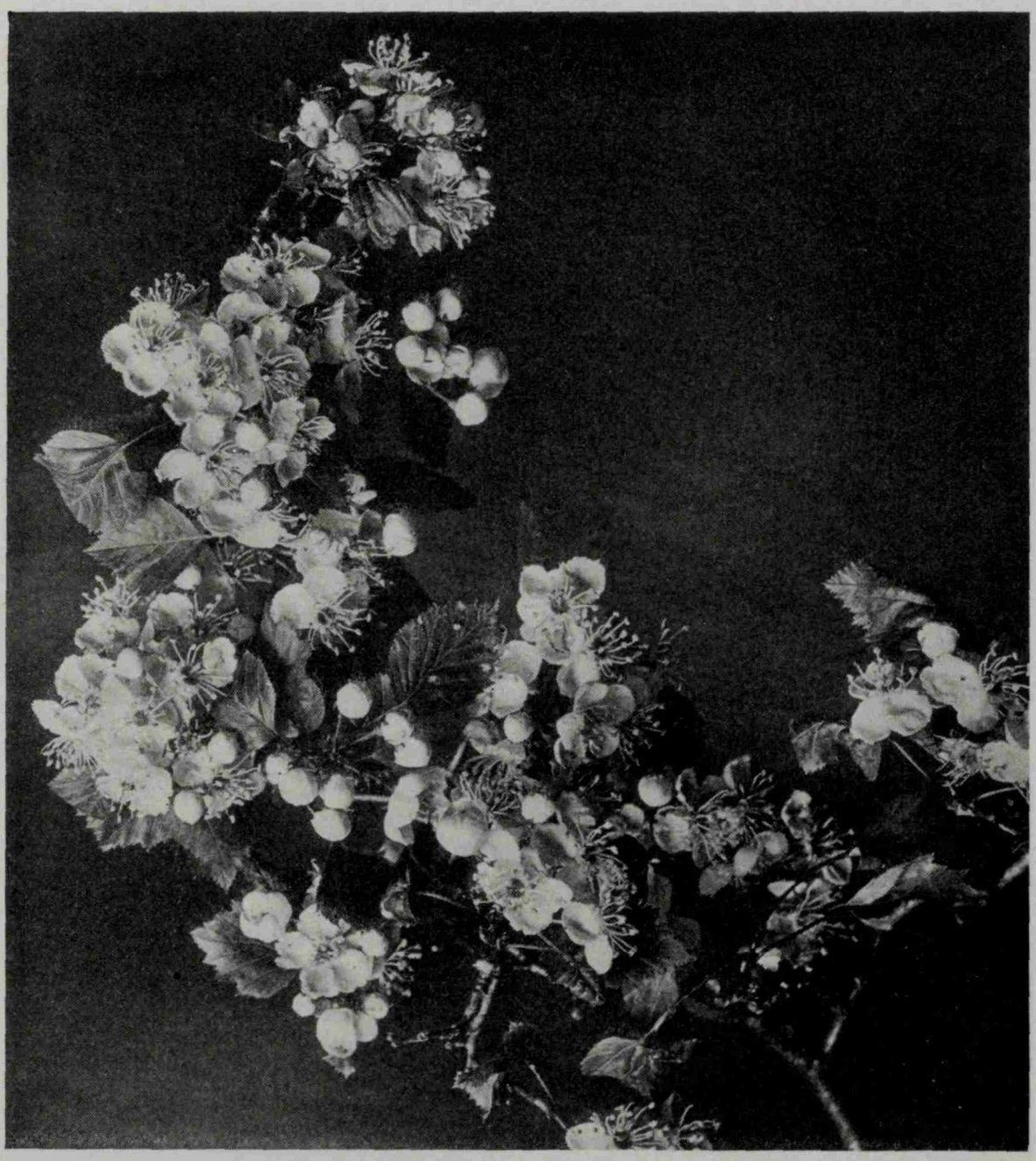
947. CRATAEGUS PRUINOSA (Wendl.) Koch. (39)

Common in sandy soils southeast. Common on the hills of the Valparaiso moraine. (Hill)

Well marked in fruit.

948. CRATAEGUS PRINGLEI Sarg. (51)

Frequent in woods adjacent to Chicago.
Upland woods, Barrington. (Hill)



WOODRUFF

HAWTHORN (*Crataegus pruinosa*)

949. CRATAEGUS MOLLIS (T. & G.) Scheele. C. coccinea var. T. & G. (57).

EDIBLE HAW. GREAT-FRUITED HAWTHORN.

Woods north and west, common. The largest fruited of our haws and extensively used for food and jelly. Difficult to find fruits fully ripe, as children are always "there first." Of late years very wormy.

The six following species are taken from Sargent and on his authority are included.

950. CRATAEGUS SERTATA Sarg.

Pastures and wood borders. Mokena, Glendon Park, Barrington.

951. CRATAEGUS VEGETA Sarg.

Banks of the Calumet River.

952. CRATAEGUS PAUCISPINA Sarg.

Woods and river banks. Maywood. (Sargent)

953. CRATAEGUS DEPILIS Sarg.

Wood borders. New Lenox. (Hill)

954. CRATAEGUS CORUSCA Sarg.

Shores of Lake Zurich, just outside our limits.

955. CRATAEGUS ASSURGENS Sarg.

Leyden, La Grange, Thatchers Park. In low woods and on river banks.

956. CRATAEGUS MACRACANTHA Lodd. C. coccinea var. Dudley.

Woods of Bowmanville and Des Plaines River valley. Valley of the north branch of the Chicago River.

957. CRATAEGUS SERA Sarg.

Low moist ground near Chicago. (Sarg.) Along the north branch of the Chicago River at Edgebrook. (Gates)

Not recognized in the 7th Ed.

958. CRATAEGUS HILLII Sarg.

Open woods, near streams. Especially the Des Plaines River at Thatchers Park. River Forest, rare. (Sarg.)

Not in 7th Ed.

959. CRATAEGUS DELECTA Sarg.

Pastures, open woods and wood borders. Fort Sheridan. Deerfield. Lake Forest. Lockport. (Hill)

Not in 7th Ed.

960. CRATAEGUS GAULTII Sarg.

Milton Township, Du Page Co., in open places. Glen Ellyn. Mokena. (Sarg.)

Not in 7th Ed.

961. CRATAEGUS APIOMORPHA Sarg.

Common in wood borders about Chicago. (Sarg.) Edgebrook. (Gates)

Not in the 7th Ed.

962. CRATAEGUS ARDUENNAE Sarg.

and

963. CRATAEGUS PEORIENSIS Sarg.

Found in the large wooded tract near Joliet known as the "Forest of Arden." (Clute.)

964. FRAGARIA VIRGINIANA Duchesne.

WILD STRAWBERRY.

Open banks, slopes, prairies; common.

965. FRAGARIA VIRGINIANA ILLINOENSIS (Prince) Gray. Fragaria grayana Vilmorin.

STRAWBERRY.

Common in low, rich soil.

966. FRAGARIA VESCA AMERICANA Port. F. americana (Port.) Brit.

HILLSIDE STRAWBERRY.

Rocky knolls near Sag Bridge. (Hill) This plant is common on the limestone cliffs of northwestern Illinois.

967. POTENTILLA ARGUTA Pursh. Drymocallis agrimonioides (Pursh.) Rydb.

WHITE POTENTILLA.

Common on prairie knolls and banks.

968. POTENTILLA MONSPELIENSIS L. P. norvegica L.

YELLOW "STRAWBERRY."

Common on open, particularly waste, grounds and in low-lying vacant places.

969. POTENTILLA MONSPELIENSIS NORVEGICA (L.) Rydb.

YELLOW "STRAWBERRY."

Not as common; confused with the species.

970. POTENTILLA ARGENTEA L.

SILVER CINQUEFOIL.

Dry sandy fields and pastures, occasional. Dry roadsides, becoming common locally.

971. POTENTILLA RECTA L. P. sulphurea Lam.

RIGID POTENTILLA. PALE CINQUEFOIL.

Along the railways southeast near Miller, rare. (Umbach, Pepoon) A showy species suitable for cultivation.

An exceedingly abundant roadside weed in Berrien Co., southwest Michigan, and rapidly advancing westward.

972. POTENTILLA PALUSTRIS (L.) Scop. Comarum palustre L.

MARSH FIVE-FINGER. SWAMP CINQUEFOIL.

Common in marshes north and southeast.

973. POTENTILLA FRUTICOSA L. Dasiphora fruticosa (L.) Rydb.

SHRUB CINQUEFOIL.

Common in bogs southeast and north.

974. POTENTILLA TRIDENTATA Ait. Sibbaldiopsis tridentata Rydb.

THREE-TOOTHED CINQUEFOIL.

Gravel ridge near Vincennes Ave. at 79th St. A few plants in 1895.

975. POTENTILLA ANSERINA L. Argentina Anserina (L.) Rydb.

SILVER WEED.

Sandy moist open places, common. Low sandy washes. Abundant along railways on sand ballast.

976. POTENTILLA CANADENSIS L.

FIVE-FINGER. CINQUEFOIL.

Very common, dry banks. Variable as to size and extent of runners.

977. POTENTILLA CANADENSIS SIMPLEX (Michx.) T. & G.

LOW FIVE-FINGER.

Dry open sandy soils southeast, occasional.

978. GEUM CANADENSE Jacq. G. album J. F. Gmel.

AVENS. WOOD GEUM.

Woods throughout, common. A fine bur fruit.

979. GEUM VIRGINIANUM L.

VIRGINIA GEUM. SWAMP GEUM.

Moist ground, Brookfield, 1900. Porter, 1912. (Umbach) Wet and shaded places, chiefly southward, infrequent. (H. & R.)

980. GEUM STRICTUM Ait.

YELLOW AVENS. STRICT GEUM.

Moist meadows north branch of the Chicago River, common.
Moist fields and prairies south. (H. & R.)
Low open grounds generally distributed.

981. GEUM VERNUM (Raf.) T. & G.

SPRING AVENS.

Romeo Island, Des Plaines River, common.
Beverly Hills. (Hill)

982. GEUM RIVALE L.

PURPLE AVENS.

Bogs, rare. (Babcock) At Otis, Ind. (Hill)
Does not appear to be found by the majority of collectors.

983. GEUM TRIFLORUM Pursh. Siversia ciliata (Pursh.) Rydb.

PURPLE AVENS. PRAIRIE GEUM. RED GEUM.

Prairie two miles south of Dunning. Also west of Wheaton. (Moffatt) In both locations growing in large communities.
The two recorded stations of this rare and interesting plant.

984. RUBUS IDAEUS ACULEATISSIMUS (C. A. Mey) R. & T. R. strigosus Michx.

WILD RED RASPBERRY.

Common in dry or moist sandy or rocky soils. Particularly abundant southeast where at times large quantities of the fine fruits are found.

985. RUBUS IDAEUS ANOMALUS Arrh.

ANOMALUS RASPBERRY.

Sandy woods, Clarke, Ind. (Umbach)
There is some discussion about this plant. (Gray, 7th Ed.)

986. RUBUS OCCIDENTALIS L.

BLACK RASPBERRY.

Thicket borders and fence rows, common. Very variable in fruit.

987. RUBUS TRIFLORUS Rich.

DWARF RASPBERRY.

Wooded marshes, common southeast. The fruit not of much account.
Also in the wooded swales of the Waukegan area.

988. RUBUS ALLEGHENIENSIS Port. R. villosus Ed. 6. R. nigrobaccus Bailey.

BLACKBERRY.

Woods, common.
Probably nine-tenths of all our blackberries are of this species.

989. RUBUS RECURVANS Blanch.

HOOKED BLACKBERRY.

Apparently well distributed. Along the Des Plaines River at Wildwood and Glenwood. (Hill)

990. RUBUS HISPIDUS L.

SWAMP BLACKBERRY.

Swamps southeast, common. Fruit pleasant.

991. RUBUS VILLOSUS Ait. R. canadensis auth. R. procumbens Muhl.

DEWBERRY.

Common in the sandy fields southeast. Less abundant in black soils. Common also on clay lands.

NOTE:—Rubus needs careful study. There seems much confusion in the nomenclature. More species may be present.

992. AGRIMONIA GRYPOSEPALA Wallr.

TALL AGRIMONY.

Thickets, Wheatland, 1909. (Umbach) Clarke, Ind. More common southeast.

993. AGRIMONIA STRIATA Michx.

AGRIMONY.

Thickets, common locally.

994. AGRIMONIA MOLLIS (T. & G.) Brit.

SOFT AGRIMONY.

Waukegan flats, 1912. Wheatland, 1912. (Umbach) Also at Naperville.

995. AGRIMONIA PARVIFLORA Ait.

SMALL-FLOWERED AGRIMONY. SWAMP AGRIMONY.

Moist soils southeast, common. Less common north and west.

996. AGRIMONIA ROSTELLATA Wallr.

WOODLAND AGRIMONY.

Alluvial soil, Naperville, 1912. (Umbach)

997. ROSA SETIGERA Michx.

CLIMBING ROSE. ILLINOIS ROSE. PRAIRIE ROSE.

Romeo Island, Des Plaines River, rare. Abundant near mouth of Flag Creek between Willow Springs and Sag Bridge. On Mud Creek. (Hill)

Called by Prof. Mueller the "Illinois Rose," the source of a number of horticultural varieties of much value.

Abundant at Mt. Forest Island and canal in Forest Preserve near Willow Springs.

998. ROSA ACICULARIS Lindl.

PRICKLY ROSE.

Pine and Miller, Ind. (Hill)

999. ROSA BLANDA Ait.

WILD ROSE.

Hillsides and banks, common. Our most abundant species.



WOODRUFF

THE SWAMP OR CAROLINA ROSE
(*Rosa Carolina*)

1000. ROSA RUBIGINOSA L.

SWEET BRIER. EGLANTINE.

Roadsides near dwellings. Infrequent. More common eastward. Occasional bushes in pastures.

1001. ROSA CAROLINA L.

SWAMP ROSE.

Common southeast in swamps.
Abundant in swales of the Waukegan moorland.

1002. ROSA VIRGINIANA Mill.

SHINING ROSE.

Low and moist grounds, common. Borders of swales.

1003. ROSA HUMILIS Marsh.

DWARF WILD ROSE.

Pastures, fields and dry banks, common. With R. blanda the prevailing forms.

NOTE:—The Genus Prunus is often segregated as a Family Drupaceae. Not recognized by Gray.

1004. PRUNUS SEROTINA Ehrh. Padus virginiana (L.) Mill.

BLACK CHERRY.

Woods, common north and west. The wilted foliage is often fatal to livestock from the prussic acid developed.

1005. PRUNUS VIRGINIANA L. Padus nana (Du Roi.) Roem.

CHOKE CHERRY.

Banks, hedgerows, ravines and sandy slopes; common.
Very beautiful and fragrant when in fresh full bloom.

1006. PRUNUS PENNSYLVANICA L. f.

RED CHERRY. PIN CHERRY. BIRD CHERRY.

Common locally throughout. Very abundant on the low ridges southeast. Attaining a height of 40 feet and a diameter of ten to twelve inches.

1007. PRUNUS PUMILA L.

SAND CHERRY.

Sands near Lake Michigan, common. Variable in fruit, some forms very large and edible.
Forms with double flowers found near Miller by Mr. Woodruff.

1008. PRUNUS CERASUS L.

SOUR CHERRY.

Occasional in thickets on Irving Park road west of Dunning. Clarke, Ind. Becoming well distributed by birds.

1009. PRUNUS NIGRA Ait.

CANADA PLUM.

Rich thickets, common. Confused with P. americana.

1010. PRUNUS HORTULANA Bailey.

WILD GOOSE PLUM.

Some good specimens near Dune Park. It is doubtful about the natural occurrence of these trees although they have all the appearance of that condition.

1011. PRUNUS ANGUSTIFOLIA WATSONI (Sarg.) Waugh.

SAND PLUM. CHICKASAW PLUM.

Sandy soils near the L. S. Ry. east of Dune Park. Several thickets. (Hill, Umbach, Pepoon)

1012. PRUNUS MARITIMA Wang.

BEACH PLUM.

Reported in Higley and Raddin as growing on lake shore, Evanston and vicinity, but no recent collector finds it.

1013. PRUNUS AMERICANA Marsh.

WILD PLUM.

River thickets on the Des Plaines, Chicago and Du Page; common. Commonly attacked by a fungus (Fomes) that tends to kill the trees.

This plum's glory has departed from northern Illinois. Fifty years ago every thicket was full of bearing plums of all sizes and colors.

1014. PRUNUS PERSICA (L.) Stokes. Amygdalus L.

PEACH.

Occasional throughout, especially along railways. (See Pear)

SPECIAL KEY TO THE PEA (BEAN) FAMILY

	Trees	A	
	More or less climbing by twining	D	
	Herbs with leaves ending in tendrils	G	
	Herbs without above features	O	
A	Thorny with pinnately compound leaves of small leaflets; flowers small, green	Honey Locust	1017
A	Not thorny nor with above characters	B	
B	Leaves simple, round, heart-shape; flowers small, rose color, in small umbels	Red Bud	1022
B	Leaves compound	C	
C	Leaves pinnate of 9–19 oblong leaflets; flowers large, fragrant, white, racemed	Locust	1049
C	Leaves bi-pinnate of many ovate leaflets; flowers small, whitish	Coffee-Tree	1016
D	Leaves 3 foliate	E	
D	Leaves pinnately 3–9 foliate; flowers brown-purple, fragrant, densely racemed	Ground Nut	1084
E	Style bearded; flowers small, purple, in axillary racemes	Wild Bean	1085
E	Style not bearded; flowers small, pale	F	
F	Stems covered with long, brown hairs	Wild Peanut	1090
F	Stems with short pale pubescence	Hog Peanut	1089
G	Styles very slender, with a tuft of hair at summit	H	
G	Styles flattened, curved without tuft	L	
H	Flowers yellowish white; leaflets 3–5 pair, thin, ovate, pale	Pale Vetchling	1083
H	Flowers purple	I	
I	Plants of sandy lake or sea shore; flowers large; leaves pale, 6–12 leaflets	Beach Pea	1079
I	Plants not so growing	J	
J	Leaflets large, oval; flowers 10–20	Showy Vetchling	1082
J	Leaflets small; flowers 2–6	K	
K	Leaflets narrow; stem winged	Marsh Pea	1080
K	Leaflets broad; stem not winged	Broad Leaved Marsh Pea	1081
L	Flowers sessile, few, axillary; leaflets 8–16 oblong; flowers blue-violet	Vetch or Tare	1074
L	Flowers racemed on long stalks; flowers blue, violet or pale	M	
M	Flowers very pale, whitish with blue tints; leaflets 8–18, narrow	Pale Vetch	1077
M	Flower darker	N	
N	Raceme dense, one sided, 15–40 flowered; leaflets narrow, 8–24	Cow Vetch	1076
N	Raceme loose, 1–20 flowered; leaflets broad, 8–14	American Vetch	1078
O	Plants trailing, creeping or lying close to ground	P	

O	Plants erect or at most decumbent	V	
P	Flower clusters in heads or short spikes	Q	
P	Flower clusters loosely few flowered, racemose	U	
Q	Flowers yellow, very small, in small, short spikes; leaflets 3, small, ovate	Medick	1041
Q	Flowers not yellow, usually purplish or white	R	
R	Flowers white, in dense head, reflexed in age; plant rooting at nodes	White Clover	1033
R	Flowers purplish, in long, stalked heads; plants trailing	S	
S	Leaves with leaflets 3, broad, often round lobed	Wild Bean	1086
S	Leaves without lobed leaflets, these oblong or lanceolate, 3	T	
T	Flowers ½″, several in number	Pink Bean	1087
T	Flowers ¼″, few in number	Small Pink Bean	1088
U	Smooth or slightly hairy	Creeping Bush Clover	1067
U	Downy or tomentose	Trailing Bush Clover	1066
V	Leaves simple, oval or oblong; racemes 2–4 flowered; flowers yellow	Rattle Box	1026
V	Leaves compound	W	
W	Leaves pinnately, several to many-foliate	X	
W	Leaves pinnately 3 foliate	g	
W	Leaves palmately 3–13 foliate	9	
X	Leaves even pinnate, i.e., no odd terminal leaflets; flowers yellow	Y	
X	Leaves odd pinnate (with odd terminal leaflets); flowers blue, purple or white	b	
X	Leaves bi-pinnate; pinnae 6–15; leaflets 20–30, ¼″ long, lanceolate	Prairie Mimosa	1015
Y	Leaflets 6 pair or less	Z	
Y	Leaflets 10 pair or more	a	
Z	Leaflets 2–3 pair, ovate, obtuse	Low Senna	1018
Z	Leaflets 4–6 pair, oblong, acute	Coffee Senna	1019
a	Leaflets 10–15 pair, narrow; flowers axillary, large, showy, yellow, 2–4 together	Partridge Pea	1020
a	Leaflets 10–20 pair, narrow; flowers axillary, very small, yellow, 1–3 together	Wild Sensitive Plant	1021
b	Flowers in racemes, large, yellow with red tints; plant silky-hairy; leaflets 17–29	Goat's Rue	1049
b	Flowers in spikes	c	
c	Leaflets 3–7	d	
c	Leaflets 11–51	e	
d	Leaflets oblong or lanceolate; flowers white, dense spikes	White Prairie Clover	1048
d	Leaflets linear; flowers violet, purple; spikes dense	Purple Prairie Clover	1046
e	Leaflets 1 to 2″ long, oval elliptic, 11–21; plants tall; flowers violet	River False Indigo	1044
e	Leaflets one to two inches long, lanceolate, 15–31; spike large; flowers greenish yellow	Canada Milk Vetch	1051
e	Leaflets ½″ or so	f	
f	Leaflets 21–51, small, oblong; plant densely white hairy; flowers blue	Lead Plant	1043

f	Leaflets 13–31 lanceolate; plant smooth; flowers rose purple	Leafy Prairie Clover	1047
g	Flowers small, solitary, axillary, rose red; leaflets small, lance form	Bird's-Foot Trefoil	1039
g	Flowers in dense, rounded heads, occasionally oblong	y	
g	Flowers in racemes	h	
g	Flowers in spikes, small, yellow; leaflets small, obovate; plant decumbent creeping	Medick	1041
h	Leaves and plant strongly odorous; racemes slender, spike-like	i	
h	Leaves and plant not strongly odorous	j	
i	Flowers yellow	Yellow Sweet Clover	1037
i	Flowers white	White Sweet Clover	1038
j	Flowers violet-blue in short raceme; mostly cultivated	Alfalfa	1040
j	Flowers yellow or cream color, large, showy; pods inflated	k	
j	Flowers white, large in long racemes; leaves blackening on drying	Wild Indigo	1025
j	Flowers reddish-purple, medium or small	l	
k	Flowers yellow; plant very smooth; racemes many, few flowered	Yellow Indigo	1024
k	Flowers cream color, very large; plant hairy; racemes large, dense	Bracted Yellow Indigo	1023
l	Leaves mostly large, with large leaflets; fruit a flattened, jointed bur	m	
l	Leaves mostly small, with small or medium leaflets; fruit not a jointed bur	w	
m	Flowers mostly on elongated, leafless stalks; leaflets ovate, 1–3″	Naked Tick Trefoil	1052
m	Flowers on leafy stems	n	
n	Leaves large in cluster at top of stem at base of flower stalks	Great Flowered Tick Trefoil	1053
n	Leaves scattered along stem	o	
o	Plants essentially smooth	p	
o	Plants rough or hairy	q	
p	Leaflets small, ovate, blunt, ½″ long; racemes panicled	Small Leaved Tick Trefoil	1062
p	Leaflets elongate, narrow, 2–5″ long; racemes panicled	Panicled Tick Trefoil	1060
p	Leaflets large, ovate-lance, long pointed; flowers large	Bracted Tick Trefoil	1055
q	Plants and leaves rough, at least the upper surface so	r	
q	Plants and leaves hairy, often softy-downy	t	
r	Leaves firm, thick, oblong or oblong-lance	s	
r	Leaves thin, broadly ovate, densely soft-downy beneath	Velvet Leaved Tick Trefoil	1058
s	Leaves strongly netted and gray beneath; fruit joints 4–7	Illinois Tick Trefoil	1057
s	Leaves hairy on veins beneath; flowers very small; fruit joints 1–3	Rigid Tick Trefoil	1064

t	Plant large, pale, hairy all over; leaflets ovate, large	**Hoary Tick Trefoil**	**1054**
t	Plant not thus	u	
u	Leaflets ⅔″ or less long, oblong, thick	**Hairy Small Tick Trefoil**	**1065**
u	Leaflets more than 1½″ long, not as above	v	
v	Flowers in large panicled racemes, showy; leaflets oblong-lanceolate	**Showy Tick Trefoil**	**1061**
v	Flowers not thus; leaflets oval, soft hairy beneath	**Dillen's Tick Trefoil**	**1059**
w	Leaflets linear or nearly so; nearly smooth	**Slender Bush Clover**	**1069**
w	Leaflets oblong or oval	x	
x	Plant sparingly hairy; leaflets thin; flowers few	**Bush Clover**	**1068**
x	Plant densely short hairy; leaflets thick, firm; flowers numerous	**Wand-Like Bush Clover**	**1070**
y	Plants tall, rigid, strictly erect; flowers cream color or white	z	
y	Plants, low, not rigid, usually decumbent; flowers red or yellow	2	
z	Leaflets linear-oblong; head oblong, loosely flowered, spike-like	**Prairie Bush Clover**	**1069**
z	Leaflets oblong or oval; heads dense	1	
1	Leaflets broad, silky; heads oblong-cylindric	**Hairy Bush Clover**	**1071**
1	Leaflets narrow, oblong; heads dense, globose	**Round Headed Bush Clover**	**1072**
2	Flowers yellow	3	
2	Flowers not yellow	4	
3	Leaflets all sessile, heads oblong	**Hop Clover**	**1035**
3	Terminal leaflets stalked; heads globular	**Low Hop Clover**	**1036**
4	Head elongate, spike-like	5	
4	Head globose or oval	6	
5	Flowers brilliant crimson, in large heads	**Crimson Clover**	**1029**
5	Flowers silky, whitish crimson, in small heads	**Rabbit-Foot Clover**	**1028**
6	Heads dense, 1″ in diameter; red, sometimes white	**Red Clover**	**1030**
6	Heads umbel-like, globose	7	
7	Heads ½–¾″ in diameter, pink, stems weak, smooth	**Alsike Clover**	**1034**
7	Heads 1″ in diameter, with much white	8	
8	Hairy, standard red; rest of flower nearly white	**Buffalo Clover**	**1031**
8	Smooth; flowers white, purplish tinted; plant with runners	**Running Clover**	**1032**
9	Leaves palmately 7–11 foliate; flowers showy, blue, purple, racemed	**Lupine**	**1027**
9	Leaves palmately 3–7 foliate; flowers small, few, purple	**Psoralea**	**1042**

LEGUMINOSAE or FABACEAE.

PULSE, PEA OR BEAN FAMILY.

A large order of plants with various habits. Leaves usually compound and flowers mostly irregular. Flowers usually sweet pea shaped with ten stamens and a single pistil becoming a legume or pod.

Includes here the Cassia Family of 1000 species and the Mimosa Family of 1500 species, often segregated.

12,000 species or more, most abundant in warm countries, with 76 in our area.

Second only to the Gramineae in economic importance. Peculiar symbiotic relation with the nitrogen-fixing bacteria producing nodules on the roots, rich in nitrogen compounds.

1015. DESMANTHUS ILLINOENSIS (Michx.) MacM. Acuan illinoensis (Michx.) Kuntze.

ILLINOIS MIMOSA. PRAIRIE MIMOSA.

Wabash Ry. east of Clarke Junction, rare, 1908. Found south of the Area along the Kankakee River.

1016. GYMNOCLADUS DIOICA (L.) Koch.

COFFEE TREE.

Along the Des Plaines River near River Forest, a colony of small trees, twenty or more in number. (Moffatt) Near Riverside. (Babcock)

Has the habit of growing in small clumps. It is possible that some of these groups are the result of Indian planting. The writer knows of seven such groups, three in northwestern Illinois, one in Fulton Co., two in Cook Co., and one in Van Buren Co., Michigan.

1017. GLEDITSIA TRIACANTHOS L.

HONEY LOCUST.

Along the Des Plaines and Du Page rivers, occasionally. Abundant on the Kankakee and Illinois rivers.

At New Lenox the tree is frequent.

1018. CASSIA TORA L.

LOW SENNA.

N. W. Ry. at Barrington, rare. (Hill) An introduction.

1019. CASSIA OCCIDENTALIS L.

COFFEE SENNA.

Along railroads Brighton Park. ('97, '98, Umbach)

1020. CASSIA CHAMAECRISTA L. Chamaecrista fasciculata (Michx.) Greene.

PARTRIDGE PEA.

Sandy soils southeast, frequent. Rare or never occurring north and west.



PEPOON



PEPOON

SAND DWELLERS

COREOPSIS (*Coreopsis lanceolata*)

PARTRIDGE PEA (*Cassia chamaecrista*)

1021. CASSIA NICTITANS L. Chamaecrista nictitans (L.) Moench.

WILD SENSITIVE PLANT.

Dry sandy soil, Tolleston, Ind., and vicinity. (Hill, Umbach) Of very local distribution.

1021-B. CASSIA MARILANDICA L.

AMERICAN SENNA.

Low grounds, at our eastern margin, becoming common.

1022. CERCIS CANADENSIS L.

RED BUD.

Along the banks of Thorne Creek at Chicago Heights, very rare. (Hill, Cowles)

Exceedingly common below Kankakee along the Kankakee River about fifty miles south of our Area center, or barely outside the limits.

1023. BAPTISIA BRACTEATA (Muhl.) Ell.

WILD INDIGO.

Prairies west of Chicago, rare. Elmhurst. (Moffatt) Near Romeo. (Umbach) Prairies northwest, occasional.

1024. BAPTISIA TINCTORIA Vent.

WILD INDIGO.

Sandy soil, both north and south, near the lake shore; infrequent. (H. & R.)

No one seems to find it of late years. Probably extinct in our Area.

1025. BAPTISIA LEUCANTHA T. & G.

WILD INDIGO.

Alluvial and rich soil, particularly southeast.

Borders of thickets throughout in suitable locations. Seems to prefer rather damp soils.

1026. CROTALARIA SAGITTALIS L.

RATTLE-BOX.

Along the Wabash Ry. east of Clarke Junction, abundant about 1900. Since then extinct or overlooked.

A large patch (between two telegraph poles) along the L. S. Ry. at Dune Park. (1912 Umbach)

Will probably appear from time to time on these eastern railways.

1027. LUPINUS PERENNIS L.

LUPINE.

Sandy open slopes, particularly abundant southeast. Originally common near the lake in Rogers Park but now exterminated there.

Very showy white and rose colored forms are rarely met with.

Common on the Waukegan sands.

1028. TRIFOLIUM ARVENSE L.

RABBIT-FOOT CLOVER.

On the B. & O. east of Miller near the Little Calumet.
Occasional in old fields. (Bab.) Of very local distribution.
Does not seem to be able to obtain a secure lease of life in our Area.

1029. TRIFOLIUM INCARNATUM L.

CRIMSON CLOVER.

For a number of years abundant in Ravenswood west of the C. & N. W. Ry., but at present seemingly extinct. Along roads southeast. Precariously persistent escape. The winters average too cold for this plant.

1030. TRIFOLIUM PRATENSE L.

RED CLOVER.

Common on roads and waste places. Often white, rarely pink.

1031. TRIFOLIUM REFLEXUM L.

BUFFALO CLOVER.

Riverside. (1900, Umbach)
Prairies, rare. (H. & R.)
Calumet region, Riverside and north branch of Chicago River. (Bab.)

1032. TRIFOLIUM STOLONIFERUM Muhl.

CREEPING BUFFALO CLOVER.

Along the railways southeast, occasional. Introduced. (Babcock)

1033. TRIFOLIUM REPENS L.

WHITE CLOVER.

Common in all grassy places.

1034. TRIFOLIUM HYBRIDUM L.

ALSIKE CLOVER. SWEDISH CLOVER.

Common and increasing in numbers, particularly along roadways.

1035. TRIFOLIUM AGRARIUM L. T. aureum auth.

HOP CLOVER.

Clarke, Ind., along the Penn. Ry. (Umbach)

1036. TRIFOLIUM PROCUMBENS L.

LOW HOP CLOVER.

Occasional along the railways and streets, Wheaton. (Moffatt) Common in southeastern part of city and on grounds of the University of Chicago.

1037. MELILOTUS OFFICINALIS (L.) Lam.

YELLOW SWEET CLOVER.

Along railways, rapidly increasing. Streets, vacant lots and roads. In many places covering large areas. Particularly common southeast on the L. S. Ry. and on the Rock Island road.

1038. MELILOTUS ALBA Desr.

WHITE SWEET CLOVER.

Abundant along streets and roads and completely overrunning vacant lots of the towns and cities. Coming to its heritage as a noted soil and forage plant. One plant had 39 seven-foot stems from one root.

1039. HOSACKIA AMERICANA (Nutt.) Piper.

BIRD'S FOOT TREFOIL.

A single plant on the C. & A. Ry. west of Brighton Park. (1893. Moffat) May be looked for as an occasional "find." Abundant locally on railways from the west.

1040. MEDICAGO SATIVA L.

ALFALFA. LUCERNE.

Streets and vacant lots, occasional. Along roads, wagon and rail.

1041. MEDICAGO LUPULINA L.

BLACK MEDICK.

Vacant lots and streets, common, but overlooked because of its small size and creeping habit.

1042. PSORALEA TENUIFLORA Pursh.

FEW FLOWERED PSORALEA.

Rather common southwest of Worth, Lemont, Lockport. Also on the prairies, Barrington. (Hill) Prairies of Naperville, Romeo and Wheatland. (Umbach)

1043. AMORPHA CANESCENS Pursh.

LEAD PLANT.

Dry hills, common, particularly southeast and on the barren prairie knolls, north and west. Beverly Hills.

1044. AMORPHA FRUTICOSA L.

FALSE INDIGO.

Moist soils, local. Reported from Hyde Park and near Miller, Ind., on the B. & O.

1045. DALEA ALOPECUROIDES Willd. Parosela Dalea (L.) Brit.

DALEA.

Along the C. B. & Q. Ry. near Naperville, rare. (Umbach, Moffatt)

1046. PETALOSTEMUM PURPUREUM (Vent.) Rydb.

RED PRAIRIE CLOVER.

Dry prairies and open barren knolls, not abundant.

1047. PETALOSTEMUM FOLIOSUM Gray.

LEAFY PRAIRIE CLOVER.

A patch spreading over an acre or more near Romeo. (Umbach)

1048. PETALOSTEMUM CANDIDUM Michx.

WHITE PRAIRIE CLOVER.

With P. purpureum but ordinarily more common.

1049. TEPHROSIA VIRGINIANA (L.) Pers. Cracca virginiana L.

GOAT'S RUE. WILD SWEET PEA.

Dry sandy knolls southeast, common.
Abundant throughout the Dune region.

1050. ROBINIA PSEUDO-ACACIA L.

LOCUST.

Ravines of Glencoe and north. Clarke, Ind. Abundant locally at Rogers Park. While doubtless originally an introduction in each locality the species is well established and perfectly spontaneous.

1051. ASTRAGALUS CANADENSIS L. A. carolinianus L.

CANADIAN MILK VETCH.

Dry banks throughout, occasional. Rarely more than one or two plants in a locality.

*DESMODIUM = Meibomia of Britton and Brown Flora.

1052. DESMODIUM NUDIFLORUM (L.) DC. Meibomia nudiflora (L.) Kuntze.

NAKED-FLOWERED TICK TREFOIL.

Dry wooded hillsides southeast, common. Much less frequent west and north.

1053. DESMODIUM GRANDIFLORUM (Walt.) DC. Meibomia grandiflora (Walt.) Kuntze.

SHOWY TICK TREFOIL.

Rich woods, particularly abundant in the Des Plaines River and Niles woods and the wooded areas of the north branch of the Chicago River.
Chicago Heights Forest Preserve.

*Britton and Brown's equivalent names are omitted for the remaining species of the genus.

1054. DESMODIUM CANESCENS (L.) DC.

HOARY TICK TREFOIL.

Moist open prairies near Thornton and Homewood Station. (Hill)

1055. DESMODIUM BRACTEOSUM (Michx.) DC.

BRACTED TICK TREFOIL.

Thicket borders particularly eastward, frequent. A common form in openings in forests. The flowers are large and showy.

1056. DESMODIUM BRACTEOSUM LONGIFOLIUM (T. & G.) Rob.

Open woods at Palos Park. (Umbach)

1057. DESMODIUM ILLINOENSE Gray.

ILLINOIS TICK TREFOIL.

Dry grounds throughout, frequent.

1058. DESMODIUM VIRIDIFLORUM (L.) Beck.

VELVET-LEAVED TICK TREFOIL.

Open woodlands throughout, common.

1059. DESMODIUM DILLENII Darl.

DILLEN'S TICK TREFOIL.

Woods of Glencoe and Naperville. (Umbach) Frequent in woods and ravines of North Shore.

1060. DESMODIUM PANICULATUM (L.) DC.

PANICLED TICK TREFOIL.

The common species, particularly in sand regions southeast. In open woodlands.

1061. DESMODIUM CANADENSE (L.) DC.

SHOWY TICK TREFOIL.

Low ground in rich soil, common throughout the area.
Flowers are numerous and showy.
The most showy of the genus found with us.

1062. DESMODIUM MARILANDICUM (L.) DC.

SMALL-LEAVED TICK TREFOIL.

Sandy hillsides southeast, common.

1063. DESMODIUM SESSILIFOLIUM (Torr.) T. & G.

SESSILE-LEAVED TICK TREFOIL.

Sandy open soils, Miller and east, becoming increasingly common the farther east one goes.

1064. DESMODIUM RIGIDUM (Ell.) DC.

RIGID TICK TREFOIL.

Calumet Region, Hammond, Clarke, Miller, Ind. (Hill)

1065. DESMODIUM OBTUSUM (Muhl.) DC.

HAIRY SMALL-LEAVED TICK TREFOIL.

Dry woods from Miller and Dune Park, Ind., eastward, occasional.

1066. LESPEDEZA PROCUMBENS Michx.

TRAILING BUSH CLOVER.

Hillsides southeast. In sandy soils, common.

1067. LESPEDEZA REPENS (L.) Bart.

CREEPING BUSH CLOVER.

In barren wooded soils at east margin of the Area. Frequent in Michigan.

1068. LESPEDEZA VIOLACEA (L.) Pers.

BUSH CLOVER.

Common in all dry soils, particularly southeast.
Palos Park. (Umbach)

1069. LESPEDEZA VIRGINICA (L.) Brit.

SLENDER BUSH CLOVER. PRAIRIE BUSH CLOVER.

Barren open woods southeast, common. Not very plentiful elsewhere.

1070. LESPEDEZA FRUTESCENS (L.) Brit.

WAND-LIKE BUSH CLOVER.

Occurs with the last, especially southeast, rare. (Higley & Raddin)

1071. LESPEDEZA HIRTA (L.) Hornem.

HAIRY BUSH CLOVER.

Common in dry ground southeast.

1072. LESPEDEZA CAPITATA Michx.

ROUND-HEADED BUSH CLOVER.

Common on dry prairie knolls and open dry hillsides. One of our most abundant species.

1073. LESPEDEZA ANGUSTIFOLIA (Pursh.) Ell.

NARROW-LEAVED BUSH CLOVER.

With the last and more common south.

1074. VICIA SATIVA L.

SPRING VETCH. COMMON VETCH.

Occasional on roadsides, west and southwest of Chicago.

1075. VICIA VILLOSA Roth.

HAIRY OR WINTER VETCH.

An escape to roadsides, orchards and fields at and beyond our eastern limits. Common as an orchard legume in southwestern Michigan.

Flowers showy.

1076. VICIA CRACCA L.

BLUE VETCH. COW VETCH.

Woods, rare. (H. & R.)

Evanston, Niles, Riverside, Morgan Park. (Babcock)

Ravenswood and Irving Park.

1077. VICIA CAROLINIANA Walt.

CAROLINA VETCH. PALE VETCH.

Hillsides and open dry woods, frequent. Very fine specimens along the hills bordering the Des Plaines River southwest of Summit.

A very dainty and pretty species.

1078. VICIA AMERICANA Muhl.

AMERICAN VETCH.

Abundant locally in moist soils throughout.

Very common along railways on the embankment fills. It appears to be a habitat exactly fitted for the species. The plants and flowers average larger in such soil, probably having more root room.

1079. LATHYRUS MARITIMUS (L.) Bigel.

BEACH PEA.

Sandy soil near Lake Michigan and locally further inland, frequent. Very common in patches southeast on the sandy slopes of small shore dunes.

1080. LATHYRUS PALUSTRIS L.

MARSH VETCHLING. MARSH PEA.

Common in moist soils, wet prairies and marshes.

1081. LATHYRUS PALUSTRIS MYRTIFOLIUS (Muhl.) Gray. L. Myrtifolius Muhl.

MYRTLE-LEAVED MARSH PEA. BROAD-LEAVED MARSH PEA.

A very common form in low grounds. More abundant than the type.

1082. LATHYRUS VENOSUS Muhl.

PURPLE VETCHLING. SHOWY VETCHLING.

Shaded banks Miller and Dune Park. Also along the North Shore, common in the ravines from Glencoe north.

1083. LATHYRUS OCHROLEUCUS Hook.

PALE VETCHLING.

Common on hillsides, in open woods, both north and southeast.
Abundant in the Chicago Heights Forest Preserve.

1084. APIOS TUBEROSA Moench. Glycine apios L.

GROUND NUT. WILD BEAN.

Low and alluvial soils, very abundant particularly eastward. A beautiful vine when in bloom with its wealth of dark brown-purple blooms.

1085. PHASEOLUS PERENNIS Walt. Phaseolus polystachyus (L.) B. S. P.

WILD BEAN. KIDNEY BEAN.

Near the Lake shore in copses, rare or infrequent. August. (Higley and Raddin).

Colehour, Ind., 1885. Sheffield, Ind., 1886. Pine Station, Ind., 1887. Near Chicago. (University of Chicago Herbarium, Babcock).

Not collected of late, possibly overlooked but more likely to have disappeared.

1086. STROPHOSTYLES HELVOLA (L.) Brit.

WILD BEAN.

Sandy moist shores of ponds and streams southeast, common. Along the various railways in sand ballast.

1087. STROPHOSTYLES UMBELLATA (Muhl.) Brit.

PINK WILD BEAN.

Sandy shores southeast, occasional.
Santa Fe Ry., Summit, in sand ballast of tracks.

1088. STROPHOSTYLES PAUCIFLORA (Benth.) Wats.

SMALL PINK BEAN.

Sandy flats and banks of the Calumet River north of Miller, Ind., rare.
Along railways in the sand ballast.

The above three curiously elect to frequent the sandy road beds of nearly all the railroads, though normal to sand overflows of river valleys.

1089. AMPHICARPA MONOICA (L.) Ell. Falcata comosa (L.) Kuntze.

HOG PEANUT.

Rich woodlands, common.

This species and the next are commonly confused but are easily distinguished by the brown reflexed hairs of A. Pitcheri.

1090. AMPHICARPA PITCHERI T. & G. Falcata Pitcheri (T. & G.) Kuntze.

HOG PEANUT.

Rich open woodlands, much less abundant than the preceding.

ORDER 19—GERANIALES

Nine Families, the Geranium, Oxalis, Flax, Caltrop, Rue, Ailanthus, Milkwort, Spurge, and Water Starwort.

LINACEAE.

FLAX FAMILY.

Mostly herbs, with regular, symmetrical flowers, 4 or 5 parted. Fruit a 5–10 seeded pod or capsule.

150 species of wide distribution with 5 in our district.

1091. LINUM USITATISSIMUM L.

FLAX.

Occasional along the lines of railways centering in Chicago.

*1092. LINUM SULCATUM Riddell.

SULCATE YELLOW FLAX.

Dry prairie knolls north and west, occasional.

1093. LINUM STRIATUM Walt.

GROOVED YELLOW FLAX.

Wet boggy ground in peat soil. Dune Park, two localities. (Hill, Chase)

1094. LINUM MEDIUM (Planch.) Brit.

SMALL YELLOW FLAX.

Open low sandy soils near Clarke Junction. (Mrs. Chase, 1897)

1095. LINUM VIRGINIANUM L.

SLENDER YELLOW FLAX.

Dry sandy and wooded hillsides southeast, common.

*The yellow species of flax are Cathartolinum in Britton and Brown's Flora.

SPECIAL KEY TO THE OXALIS FAMILY

A	Flowers violet, purple; leaves often red zoned; from a scaly bulb	Violet Wood Sorrel	1096
A	Flowers yellow	B	
B	Stems prostrate and creeping, mostly about greenhouses	Creeping Oxalis	1100
B	Stems erect or decumbent	C	
C	Peduncles usually two flowered	D	
C	Peduncles several flowered; plant with runners; pedicels cymose	Cymose Oxalis	1099
D	Hairs of stem short and appressed	Yellow Oxalis	1097
D	Hairs of stem long and spreading	Slender Oxalis	1098

OXALIDACEAE.

WOOD SORRELS.

Herbs (ours) with regular 5-parted flowers and palmately 3-foliate acid leaves.

280 species, chiefly tropical, with 4 or 5 in our district.

NOTE:—In Britton and Brown, Small places the Violet oxalis in Ionoxalis, and the yellow in Xanthoxalis.

1096. OXALIS VIOLACEA L. Ionoxalis Small.

VIOLET WOOD SORREL.

Open, particularly gravelly situations, common.

The leaves are commonly banded with red tints.

1097. OXALIS STRICTA L. Xanthoxalis Small.

YELLOW WOOD SORREL.

Open, dry or sandy places, fields and vacant lots, common.

1098. OXALIS FILIPES Small.

SLENDER YELLOW WOOD SORREL.

Calumet Heights, '06. Porter, '12. Wheatland, '16. (Umbach)

1099. OXALIS CORNICULATA L. O. cymosa Bushii. O. stricta auth.

LADY'S WOOD SORREL. PROCUMBENT YELLOW WOOD SORREL.

Particularly in waste places about gardens, streets, common. Confused with the last.

Very common in the flower gardens of Irving Park.

1100. OXALIS REPENS Thunb.

CREEPING YELLOW WOOD SORREL.

Common in and about greenhouses, Chicago.

NOTE:—The Wood Sorrels are much in need of uniform names as may be seen by consulting the various manuals.

GERANIACEAE.

GERANIUMS.

Herbs, with alternate or opposite mostly palmate leaves and regular 5 parted flowers, having a disk. Hypogynous; rootstocks astringent.

450 species of temperate regions, most abundant in S. Africa with 4 in our district.

1101. GERANIUM MACULATUM L.

CRANESBILL. WILD GERANIUM.

Rich woods, particularly north and south. Rarely has a white-flowered form.

Called by many "Primrose," which almost needless to say is a long way off from the true relationship.

1102. GERANIUM ROBERTIANUM L. Robertiella Robertiana (L.) Hanks.

HERB ROBERT. RED ROBIN.

Beech woods of Otis on extreme eastern margin of our Area. The plant abounds in the beech woods of Michigan. Very heavy scented.

1103. GERANIUM CAROLINIANUM L.

CAROLINA GERANIUM.

Mostly in open woods in burnt soil and along railways. Occasionally in waste places and vacant lots. Its liking for charcoal and ashes is very marked.

1104. GERANIUM PUSILLUM Burm. f.

SMALL GERANIUM.

Locally common near railroad stations and on railroads. Along well traveled highways.

1105. ERODIUM CICUTARIUM (L.) L'Her.

HERON'S BILL. ALFILARIA.

Almost certainly a patch or more about railroad depot yards, in the Indiana towns of our district. Rather striking in bloom when numerous.

ZYGOPHYLLACEAE.

CALTROPS.

Mostly tropical herbs or woody plants. Commonly with pinnately compound leaves and perfect regular 5 parted flowers.

150 species, with 2 in our district.

1106. TRIBULUS TERRESTRIS L.

LAND CALTROP.

Railroad yards of Alton and Sante Fe Rys., rare. Extends to Joliet.

Umbach, Moffatt, and others have repeatedly found the plant.

1107. KALLSTROEMIA MAXIMA (L.) T. & G.

On the ballast of the C. R. I. & P. Ry. at Blue Island. A considerable patch. (Bab.)

RUTACEAE.

RUES.

Mostly woody plants with pellucid dotted leaves, bitter aromatic and regular 3–5 parted flowers, the ovary raised on a disk.

880 species, mostly S. African and Australian, with 3 in our area.

1108. ZANTHOXYLUM AMERICANUM Mill.

PRICKLY ASH. TOOTHACHE TREE.

Rich woods, particularly near streams. More abundant north and west. Very common at Edgebrook and on the Des Plaines River. The Skokie woods are full of thickets of this species.

1109. PTELEA TRIFOLIATA L.

HOP TREE. WAFER ASH.

Occasional throughout in all sorts of soils not too moist. Typical of river banks and the dunes of the southeast.

1110. PTELEA TRIFOLIATA MOLLIS T. & G. Ptelea tomentosa Raf.

Sand dunes from Miller and Dune Park eastward. The northern limit of this variety or species that extends into Mexico.

SIMARUBIACEAE.

QUASSIA FAMILY.

Trees and shrubs, similar to Rutaceae, but without pellucid dots in the leaves.

1111. AILANTHUS GLANDULOSA Desf.

TREE OF HEAVEN.

Very common as an escape. Easily naturalized. This tree is rapidly assuming the character of a tree weed in localities where there are large seed-bearing specimens. If undisturbed such a place quickly becomes a grove.

POLYGALACEAE.

MILK WORTS.

Herbs with irregular hypogynous flowers with 4 to 8 stamens. The fruit a 2-celled, 2-seeded pod.

750 species, widely distributed, with 7 in our district.

1112. POLYGALA PAUCIFLORA Willd.

FRINGED POLYGALA.

Found in two localities many years ago. Thornton and Auburn Park. Prof. Hill cites it in both places. It has not been seen for many years.

It is found near Niles, Michigan, in Cass Co., in the Dowagiac Swamp.

Dune Park. (1900, Umbach) Near Pine, Ind. (Higley)

Evidently a very rare or overlooked plant.

1113. POLYGALA POLYGAMA Walt.

PURPLE MILKWORT. COMMON POLYGALA.

Sandy soils southeast, common. A white form of very thrifty growth is abundant west of Miller, Ind., along the old right of way of the L. S. Ry.

Often small white cleistogamous flowers are found in numbers.

1114. POLYGALA SENEGA L.

SENECA SNAKE-ROOT.

Dry prairies and gravelly banks, common. Much used in medicine. Our most abundant species.

1115. POLYGALA SANGUINEA L. P. viridescens L.

FIELD OR PURPLE MILKWORT. TALL POLYGALA.

Moist flats. Very abundant at Porter, Ind. Found also north and west as it is a common species in northern Illinois.

On the Waukegan moorland it is common. Areas are found at times all white, appearing to have a common origin.

1116. POLYGALA INCARNATA L.

PINK POLYGALA.

Eggleston, Ill., 1885. (Hill) Cheltenham Beach, 1886. (Babcock) S. Evanston. (Raddin, 1893) A plant of original prairies.

Prairies from Berwyn north and west.

1117. POLYGALA CRUCIATA L.

CROSS MILKWORT.

Common in wet soil of open marshlands, Calumet River. Little Calumet. Dune Park and east.

1118. POLYGALA VERTICILLATA L.

WHORLED POLYGALA.

Dry barren soils, frequent. Commonly overlooked as it is very insignificant in habits and bloom.

EUPHORBIACEAE.

SPURGES.

Plants with milky juice and imperfect flowers, mostly apetalous. The ovary is 3 celled, becoming a three lobed fruit.

4000 species, widely distributed, with 22 in our district.

Euphorbia has lately been subdivided into a number of genera. Dr. Millspaugh has furnished a revision for the Flora which is here followed in preference to Gray, whose names are used as synonyms.

1119. CROTON CAPITATUS Michx.

HEAD CROTON.

Along the Wabash Ry. at Miller, Ind., rare. C. & A. Ry. at Brighton. (Moffatt)

1120. CROTON GLANDULOSUS L.

SAND CROTON.

Sands of the Waukegan Area, occasional. Also in the sand flats of Lake and Porter Cos., Ind.

1121. CROTON MONANTHOGYNUS Michx.

ONE-FRUITED CROTON.

Barren open land at Kenilworth. (Gates)

1122. ACALYPHA VIRGINICA L.

MERCURY.

Fields and open waste places, common.

1123. CHAMAESYCE POLYGONIFOLIA (L.) Small. Euphorbia polygonifolia L.

SAND SPURGE.

Abundant in moist sands southeast from Pine to Dune Park and east. On railways, sandy flats and the north shore.

1124. CHAMAESYCE SERPENS (H. B. K.) Small. Euphorbia serpens H. B. K.

ROUND LEAVED SPURGE.

Common along the C. & A. Ry. between Brighton Park and Summit, generally on the immediate track.

1125. CHAMAESYCE SERPYLLIFOLIA (Pers.) Small. Euphorbia serpyllifolia Pers.

THYME-LEAVED SPURGE.

Sandy ballast of railways, occasional.

1126. CHAMAESYCE GLYPTOSPERMA (Engelm.) Small. Euphorbia glyptosperma Engelm.

RIDGE-SEEDED SPURGE.

Railroad embankments at Lyons, frequent. (Hill)
Common along all the railways, particularly those from the southwest.

1127. CHAMAESYCE PRESLII (Guss.) Arthur. Euphorbia preslii Guss.

LARGE SPOTTED SPURGE.

Open places, chiefly sandy, near Lake Michigan. Frequent from Evanston and Glencoe to Pine and Miller, Ind. Riverside, Calumet, Palatine.

1128. CHAMAESYCE RAFINESQUEI (Greene) Small. Euphorbia hirsuta (Torr.) Wiegand.

HAIRY SPURGE.

Abundant on the St. Paul Ry. at Irving Park.

1129. CHAMAESYCE MACULATA (L.) Small. Euphorbia maculata L.

SPOTTED SPURGE.

Very common in open places, having a special tendency to grow on burnt soil.

1130. CHAMAESYCE HUMISTRATA (Engelm.) Small. Euphorbia humistrata Engelm.

HAIRY SPREADING SPURGE.

Very abundant in lawns, pastures and roadsides.
The only spurge that is a menace to lawns, often killing out the grass. Like crab-grass turns reddish in August and thus causes unsightly discolorations.

1131. DICHROPHYLLUM MARGINATUM (Pursh.) Kl. & G. Euphorbia marginata Pursh.

SNOW-ON-THE-MOUNTAIN.

Waste places of Irving Park and other parts of Chicago, rare.
Occasional on the railways coming from the west.

1132. TITHYMALOPSIS COROLLATA (L.) Kl. & G. Euphorbia corollata L.

FLOWERING SPURGE.

In dry soil everywhere. At its best in the sandy soils southeast. Much used for cut flowers under the name "White Forget-me-not."

1133. TITHYMALUS OBTUSATA (Pursh.) Kl. & G. Euphorbia obtusata Pursh.

BLUNT LEAVED SPURGE.

A small number of plants west of the Des Plaines River in damp woods, near Madison St. (Chase)

1134. TITHYMALUS CYPARISSIAS (L.) Hill. Euphorbia cyparissias L.

GROUND-PINE. CYPRESS SPURGE. "KISS-ME-DICK." CYPRESS.

Abundant near dwellings. Locally common in old cemeteries and nearby country roads.

1135. TITHYMALUS PEPLUS (L.) Hill. Euphorbia Peplus L.

PETTY SPURGE.

Yards and gardens of Irving Park, rare.

1136. TITHYMALUS COMMUTATUS (Engelm.) Kl. & G. Euphorbia commutata Engelm.

TINTED SPURGE.

Local along the Des Plaines, at Maywood, Riverside, Calumet. (Bab.)
Not reported by later observers.

1137. POINSETTIA CUPHOSPERMA (Engelm.) Small. Euphorbia dentata cuphosperma Engelm.

WARTY SPURGE.

A large colony along the Ill. Cent. Ry. tracks south of 39th St. (Millspaugh)

1138. POINSETTIA DENTATA (Michx.) Small. Euphorbia dentata Michx.

TOOTHED SPURGE.

Steep dry banks, Lemont. (Hill) C. B. & Q. Ry., Naperville. (Moffatt)
Belt Ry. at Beverly Hills, rather common.

1139. POINSETTIA HETEROPHYLLA (L.) Kl. & G. Euphorbia heterophylla L.

PAINTED SPURGE.

Common locally along railways, particularly along the Inner Belt Ry.

CALLITRICHACEAE.

WATER STARWORTS.

Slender aquatics with minute imperfect flowers.
11 species, with 3 in our area.

1140. CALLITRICHE DEFLEXA AUSTINI (Engelm.) Heg. C. Austini Engelm.

Wet soil of Skokie Marsh. (Umbach)

1141. CALLITRICHE PALUSTRIS L. C. verna L.

Near Calumet River from Clarke to Hammond. Very rare or overlooked.
Pond in Winnetka, one-half mile northeast of station, frequent. (Johnson, Raddin) Skokie Marsh, common. (Sherff.)

1142. CALLITRICHE HETEROPHYLLA Pursh.

Abundant in a pond west of Mokena. (Hill) Also in railroad ditches of West Gary, Ind.

ORDER 20—SAPINDALES

Twelve Families, the Crowberry, Box, False Mermaid, Cashew, Cyrilla, Holly, Staff Tree, Bladder Nut, Maple, Buckeye, Soapwort, and Touch-me-not.

LIMNANTHACEAE.

FALSE MERMAIDS.

Low, tender annuals, with pinnate leaves and small 3-parted flowers, perfect, regular and symmetrical.
6 species, with 1 in our district.

1143. FLOERKEA PROSERPINACOIDES Willd.

MERMAID WEED.

Moist open woods. Abundant along the Des Plaines and Chicago rivers. Very generally overlooked.

ANACARDIACEAE.

CASHEWS. SUMACS.

Trees or shrubs with resinous or milky juices; alternate, often compound, leaves and small, greenish, usually polygamous, flowers. Fruit a drupe.
400 species, mostly tropical, with 6 in our district.

1144. RHUS TYPHINA L. R. hirta Sudw.

STAGHORN SUMAC.

Common near Lake Michigan north and southeast. Frequent inland.

Our largest species. Trees 6 to 8 inches in diameter are occasionally seen Often cultivated, especially the cut-leaved horticultural variety.

1145. RHUS GLABRA L.

SMOOTH SUMAC.

Very common north and in the regions west and southwest. Rarely in the same locality with the Staghorn.

Of late our zealous systematists have sought to make many species out of R. glabra. (See Greene)

Assumes wonderful tints in Autumn.

1146. RHUS COPALLINA L.

SHINING SUMAC.

Common in the sand regions north and southeast. Extremely brilliant in Autumn foliage.

1147. RHUS VERNIX L. Toxicodendron vernix (L.) Kuntze.

POISON SUMAC. POISON OAK. SWAMP SUMAC.

Swamps near Lake Michigan throughout the district.

A very striking shrub in Autumn foliage and fruit.

The writer cut off some 5000 shoots from three acres of swamp land, using a mattock, in the hope that they might be killed out. They are as numerous now as before the cutting.

1148. RHUS TOXICODENDRON L. Toxicodendron radicans (L.) Kuntze.

POISON IVY.

Everywhere in rich or moist woodlands. Also abundant in sands near Lake Michigan where it forms mats of sub-erect habits. In the Chicago River, Niles and Des Plaines River woods, climbs very high.

On many sand tracts in Lake View, covers large areas with a growth two to three feet in height. The larger longer stems creeping extensively.

1149. RHUS CANADENSIS Marsh. Schmaltzia crenata (Miller) Greene.

FRAGRANT SUMAC. SWEET SUMAC.

Sandy dunes near Lake Michigan, common, variable. A valuable sand binder.

AQUIFOLIACEAE = Ilicaceae Lowe.

HOLLIES.

Trees and shrubs with small axillary flowers, 4-parted; a 4–8 celled, 4-8 seeded ovary.

170 species of temperate and tropical regions, with 2 in our area.

1150. ILEX VERTICILLATA (L.) Gray.

NORTHERN HOLLY. WINTERGREEN. BLACK ALDER.

Wooded and particularly sphagnum swamps of Lake and Porter Cos., Ind., abundant.

Gathered in enormous quantities for decorative purposes. One collector gathered 600 pounds in 1918.

In woods at Ravinia on North Shore, fruiting. (Jensen)

1151. NEMOPANTHUS MUCRONATA (L.) Trel.

MOUNTAIN HOLLY.

Damp ground on marsh borders, Miller and Dune Park; not common.

CELASTRACEAE.

STAFF TREES.

Small trees, shrubs or climbing shrubs with alternate leaves, small regular flowers. Stamens on a disk covering the 2–8 celled ovary. Seeds arilled.

350 species of wide distribution, with 4 in our limits.

1152. EVONYMUS ATROPURPUREUS Jacq., also Euonymus.

WAAHOO. BURNING BUSH.

Rich damp woods near the Des Plaines and Chicago rivers, frequent.

Chicago Heights Forest Preserve.

A showy plant when a well fruited specimen is found.

1153. EVONYMUS AMERICANUS L.

STRAWBERRY BUSH.

Woods of Calumet region, and Des Plaines River valley to Palatine, rare. (Brennan) Not generally reported.

1154. EVONYMUS OBOVATUS Nutt.

RUNNING STRAWBERRY BUSH.

Common in damp shaded places throughout our region. The fruits are striking, looking like a pink strawberry.

A very early blooming plant.

1155. CELASTRUS SCANDENS L.

SHRUB BITTER-SWEET. AMERICAN BITTER-SWEET.

Very common and luxuriant on the dunes from Miller eastward. Common in moist woods north and west.

Very common as a fence row plant in the southwestern townships of Cook Co. One stretch was noted one-quarter of a mile long, a real blaze of orange-red with the ripe fruits. This vine has a struggle to hold its own as everyone gathers the fruits for decorative purposes.

STAPHYLEACEAE.

BLADDER NUTS.

Shrubs or small trees with opposite leaves and perfect flowers. Fruit an inflated bladder-like capsule.

22 species, chiefly Asiatic, 1 with us.

1156. STAPHYLEA TRIFOLIA L.

BLADDER NUT.

Rich woods throughout, occasional. Most abundant along the Des Plaines River.

The bladder-like fruits conspicuously rattle and rustle in the wind.

ACERACEAE.

MAPLES.

Trees and shrubs with sweet sap. Opposite, mostly palmately lobed or divided leaves; small regular, mostly imperfect flowers; fruit single seeded, broadly winged.

100 species, with 5 in our district.

1157. ACER SACCHARUM Marsh. A. saccharinum Wang.

HARD OR SUGAR MAPLE.

Dry clay soils, most common along the North Shore.

Common at Glencoe, Ravinia, Bryn Mawr. Also common at Palos Park.

1158. ACER SACCHARUM NIGRUM (Michx.) Brit. Acer nigrum Michx.

BLACK MAPLE. ROCK MAPLE.

The common tree along the lower Des Plaines River. Particularly abundant in the low lying Forest Preserve below Willow Springs.

1159. ACER SACCHARINUM L.

SILVER MAPLE. SOFT MAPLE. WHITE MAPLE. RIVER MAPLE.

Des Plaines River and Chicago River bottoms, common. Fine specimens at River Forest and in the wet woods of Edgebrook.

Leaves exceedingly variable as to lobing.

Cultivated under several horticultural forms.

Often badly infested by the cottony maple scale which at times kills the tree.

1160. ACER RUBRUM L.

RED MAPLE. SWAMP MAPLE.

Cold, boggy or moist woodlands. Much more common in Indiana than north or west.

Abundant in the wet woods at Edgebrook, near the Chicago River.

Very showy in young foliage and fruit, both being scarlet-crimson.

1161. ACER NEGUNDO L. Negundo aceroides Moench.

BOX ELDER. ASH LEAVED MAPLE.

Moist soils near water, particularly fine along the Des Plaines River. Thorn Creek valley. Hickory Creek valley.

The pistillate tree is usually brown-twigged, and the staminate tree green-twigged, corresponding to the flower colors.

SAPINDACEAE.

SOAP BERRIES.

Mostly trees or shrubs. Leaves usually alternate and compound. Flowers often imperfect.

1000 species, mostly of tropical regions, with 1 in our area.

1162. AESCULUS GLABRA Willd.

BUCKEYE.

Frequent along Thorn Creek at Chicago Heights. Some trees two feet in diameter. Very many small specimens show that the species is aggressive and increasing in numbers.

BALSAMINACEAE.

TOUCH-ME-NOTS.

Herbs mostly, with bland watery sap. Alternate simple leaves and irregular flowers with spurred calyx. Largely glaucous succulent. Fruit with 5 coiled valves.

220 species, mostly Asiatic, 3 with us.

1163. IMPATIENS BIFLORA Walt.

SPOTTED TOUCH-ME-NOT. WILD BALSAM. JEWEL WEED.

Moist shaded soil, very abundant.

Common in the wet woods of the Des Plaines and Chicago River valleys.

1164. IMPATIENS PALLIDA Nutt.

PALE TOUCH-ME-NOT.

Similar places but much less common.

In Michigan almost entirely confined to the beech timber while the first species is everywhere in suitable habitat.

1165. IMPATIENS PALLIDA ALBA Clute.

WHITE TOUCH-ME-NOT.

Found at Dellwood Park at our southwestern limits. (Clute)

ORDER 21—RHAMNALES

Two Families, the Buckthorns and Grapes.

Woody plants with berry or drupe-like fruits, occasionally capsular.

RHAMNACEAE.

BUCKTHORNS.

Shrubs or trees, often thorny. Inflorescence usually cymose or panicled. Flowers small, regular, 4–5 parted.

575 species of temperate and warm regions, with 6 in our district.



WOODRUFF

SPOTTED TOUCH-ME-NOTS (*Impatiens biflora*)

1166. RHAMNUS CATHARTICA L.

BUCKTHORN.

An escape in the Edgebrook woods. Common in wooded nook at Barrington. (Hill) Also in woods at Wildwood. (Hill)

1167. RHAMNUS LANCEOLATA Pursh.

WILD BUCKTHORN.

Moist rich woods north and west, occasional. Common at Glencoe. (Jensen)
Frequent along the Des Plaines River.
The wood is yellowish, thus distinguishing it from other shrubs.

1168. RHAMNUS ALNIFOLIA L'Her.

ALDER BUCKTHORN.

Wooded swamps, common, particularly so in the southeastern part of our region.

1169. RHAMNUS FRANGULA L.

ALDER BUCKTHORN.

Woods between Kenilworth and Winnetka, not far from Lake Michigan. Associated with sassafras, red cherry, and Diervilla. (Jensen)

1170. CEANOTHUS AMERICANUS L.

JERSEY TEA. RED ROOT.

Very common throughout in dry open places, in woodlands and thicket borders.
Often listed as an ornamental shrub.
The roots afford fine examples of Mycorrhiza.

1171. CEANOTHUS OVATUS Desf.

OVATE LEAVED JERSEY TEA.

Common on sand ridges from Pine to Miller, Ind.
Also on the ridges of the Waukegan sands.

VITACEAE.

GRAPES.

Climbing or erect shrubs. Swollen joints and alternate leaves; small, regular, greenish, panicled, racemed or cymose flowers.
450 species, with 8 in our district.

1172. PSEDERA QUINQUEFOLIA (L.) Greene. Parthenocissus quinquefolia (L.) Planch.

VIRGINIA CREEPER. AMERICAN IVY.

Common in woods, particularly in low rich soils.
Beautiful foliage coloration occurs in Autumn.
The leaves are often devoured by the larvae of a beautiful Sphinx Moth.



WOODRUFF

A CONGENIAL PLANT COMPANY

JERSEY TEA IN BLOOM; LEAD PLANT AT RIGHT; LEAVES OF GREAT ROSIN-WEED; BROWN-EYED SUSAN AT LEFT

1173. VITIS LABRUSCA L.

FOX GRAPE.

Occasional in low sandy soil from Miller eastward. Appearing in isolated patches or colonies far removed from each other. Often plentifully fruit bearing, as those midway between Mineral Springs and Port Chester.

The vines may be in part the result of aboriginal planting.

1174. VITIS AESTIVALIS Michx.

SUMMER GRAPE.

Very common in dry sandy soil. More common southeast in the sand region. The fruit often abundant.

1175. VITIS BICOLOR Le Conte.

BLUE GRAPE.

Dry sandy woods of the Dune region, occasional.

1176. VITIS CINEREA Engelm.

DOWNY GRAPE. GRAY GRAPE.

In a tamarack marsh two miles east of Miller, Ind. Only a few vines. (Umbach, Pepoon)

1177. VITIS VULPINA L. V. riparia Michx.

RIVER GRAPE. SWEET SCENTED GRAPE.

The common grape throughout, very variable in fruit.

Particularly noticeable on the dunes, where it produces great quantities of fruit. An accomplished sand binder for small dunes.

1178. VITIS PALMATA Vahl. V. rubra Michx.

RED GRAPE.

Two vines, one in Thorn Creek near Glenwood and the second on the banks of the Calumet near Halsted St. (Hill, 1897)

1179. VITIS CORDIFOLIA Michx.

FROST GRAPE. CHICKEN GRAPE.

Along streams, frequent. (H. & R.) Not reported by collectors generally.

Most frequent on the lower Des Plaines River from Summit southwest.

ORDER 22—MALVALES

Two Families, the Linden and the Mallow. Many species have very tough, fibrous bast, or inner bark, making them useful for various fiber purposes.

TILIACEAE.

LINDENS. BASSWOODS.

Trees, shrubs, or rarely herbs. With tough bast, alternate leaves, and cymose 5-parted flowers, with indefinite stamens. Fruit a drupe of dry, round nature.

245 species, with 1 in our district.

1180. TILIA AMERICANA L.

BASSWOOD.

Rich, particularly moist, woodlands, common.

One of the tree species that withstands to a marked degree the effect of sand burial on the southeastern dunes.

Buds edible, bark used by the pioneers for thongs, and small branches for forage.

The finest growth along the Des Plaines River.

MALVACEAE.

MALLOWS.

Herbs or shrubs (arboreal tropical forms). With alternate, palmate leaves. Flowers 5-parted, regular, perfect, often large. Stamens indefinite, united into a column.

800 species, widely distributed, with 23 in our district.

1181. ABUTILON THEOPHRASTI Medic. A. abutilon Rusby.

VELVET LEAF. INDIAN MALLOW. BUTTER WEED. AMERICAN JUTE.

Fields, vacant lots, and streets, becoming common. Common in market garden plots. A noted weed of the Corn Belt of Illinois.

1182. SIDA SPINOSA L.

SIDA.

Occasional along railways throughout.

1183. ALTHAEA ROSEA L.

HOLLYHOCK.

Occasionally persistent about abandoned dwellings, Chicago.

1184. MALVA ROTUNDIFOLIA L.

LOW MALLOW. CHEESES. MALICE.

Barnyards, vacant lots and gardens, common. A "bad" weed in certain surroundings. The edible "cheeses" are great favorites of the children.

1185. MALVA CRISPA L. Malva verticillata L.

CURLED MALLOW.

Spontaneous near old-time gardens.

1186. MALVA SYLVESTRIS L.

HIGH MALLOW.

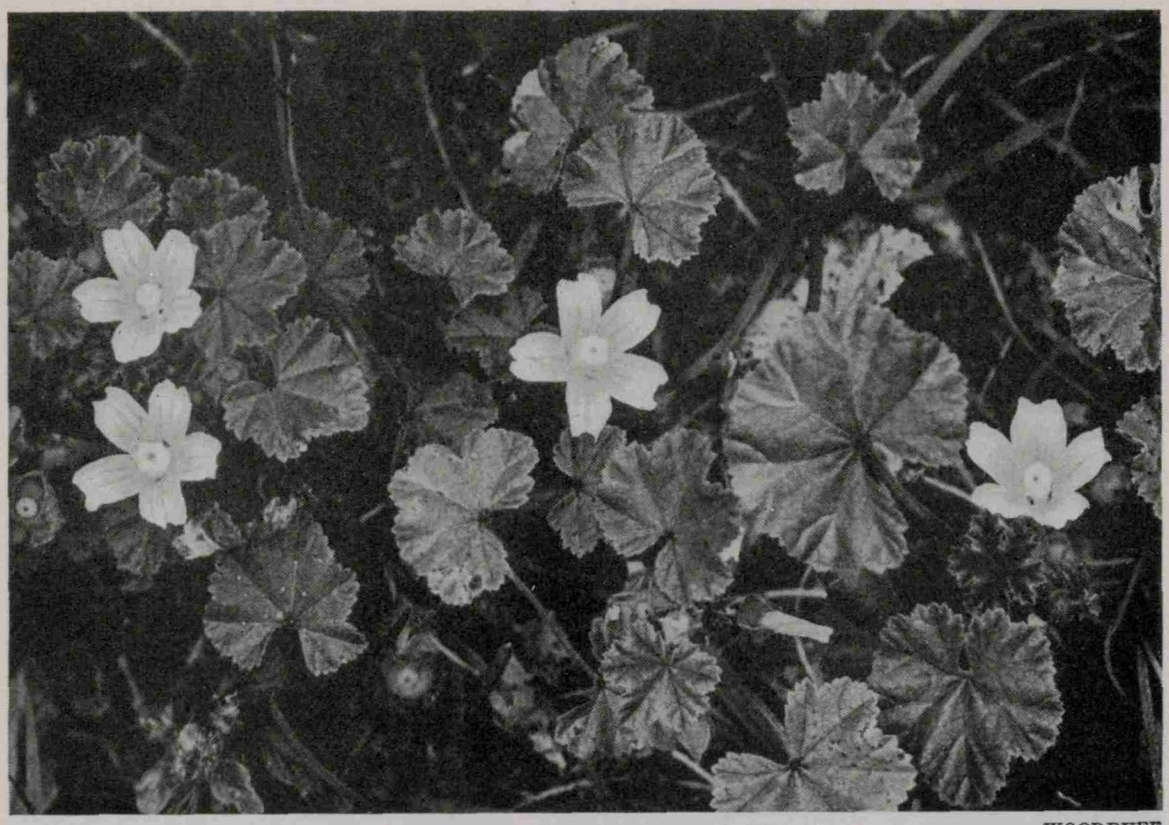
Occasional about old houses. Seen at Clarke, Ind.

1187. MALVA MOSCHATA L.

MUSK MALLOW.

Roadsides and occasionally near dwellings.

Both the white and rose colored forms are frequent.



WOODRUFF

MALLOWS (*Malva rotundifolia*)

1188. CALLIRHOE TRIANGULATA (Leavenw.) Gray.

POPPY MALLOW.

A colony on the sand ridge south of Lutheran Cemetery, east of Clark St., persisted for many years but seems to be finally exterminated.

Reported in former years from Niles, Palatine, Englewood, Hyde Park, and South Chicago.

1189. CALLIRHOE INVOLUCRATA (T. & G.) Gray.

POPPY MALLOW.

C. B. & Q. Ry. at Lisle and Naperville, 1896, 1900. (Umbach)

1190. HIBISCUS MOSCHEUTOS L.

ROSE MALLOW.

Large patches at Mineral Springs and Port Chester, Ind. Evidently long established. In 1891, found on shores of Lake George near Sheffield. On Wolf Lake near Hegewisch. (Hill, Cowles)

On Des Plaines River near Summit, rare. (Moffatt)

1191. HIBISCUS MILITARIS Cav.

ROSE MALLOW.

Along the Des Plaines River, rare. Maywood. (Munroe) Summit, a few plants near the Belt Line and lower down toward Willow Springs.

A rare plant but becoming increasingly common, the farther down stream one goes. Very common on the middle Illinois River.



WOODRUFF

THE GREAT ROSE MALLOW (*Hibiscus Moscheutos*)

1192. HIBISCUS TRIONUM L.

FLOWER-OF-AN-HOUR.

Very abundant in gardens and waste places. Irving Park and elsewhere.

1193. NAPAEA DIOICA (Clayton) L.

GLADE MALLOW.

Big woods west of Evanston. (Raddin, 1865) Two specimens.

Common in northeastern Illinois along the Pecatonica and Galena rivers. Many specimens seen (1924) in a low moist swale near Hickory Creek, along the C. R. I. & P., a short distance from New Lenox.

ORDER 23—PARIETALES

Seven Families, the Camelia, St. John's-wort, Water-wort, Rock Rose, Violet, Passion Flower, and Loasa.

HYPERICACEAE.

ST. JOHN'S-WORTS.

Herbs or shrubs or small tropical trees, with opposite usually entire leaves, pellucid or black dotted; flowers regular and perfect, 4–5 parted; stamens indefinite, often in sets of three or five. Fruit a capsule.

280 species, with some 14 in our district.

1194. HYPERICUM ASCYRON L.

GREAT ST. JOHN'S-WORT.

Banks of the Des Plaines and Du Page rivers, rare. Near Lake Calumet, banks of Thorne Creek, banks of Salt Creek, McCook, Porter Co., Ind. (Hill)

1195. HYPERICUM PERFORATUM L.

ST. JOHN'S-WORT.

Grassy places, roads, waste places. Occasional eastward, becoming common as Michigan is approached.

1196. HYPERICUM PUNCTATUM Lam.

SPOTTED ST. JOHN'S-WORT.

Damp, open grounds, occasional throughout.

1197. HYPERICUM PROLIFICUM L.

SHRUBBY ST. JOHN'S-WORT.

Moist shaded banks, infrequent or rare.

Lemont, Willow Springs, Wheeling, Palatine.

Leaves two to four inches long. (Babcock)

1198. HYPERICUM KALMIANUM L.

KALM'S ST. JOHN'S-WORT.

Sandy, moist shores of Lake and Porter Cos., Ind., very common.
Waukegan moorland, frequent.

1199. HYPERICUM CISTIFOLIUM Lam.

ROUND-FRUITED ST. JOHN'S-WORT.

Rocky flats of the Des Plaines River, Lemont and Romeo. (Hill)

1200. HYPERICUM ELLIPTICUM Hook.

PALE ST. JOHN'S-WORT.

Swampy ground throughout, frequent. Our common species.

1201. HYPERICUM MUTILUM L.

WEAK ST. JOHN'S-WORT.

Common along the margins of sloughs. Clarke Junction and east to the limits of our Area.

1202. HYPERICUM GYMNANTHUM Engelm & Gray. H. mutilum L., var. gymnanthum Gray.

CLASPING-LEAVED ST. JOHN'S-WORT.

Low ground, South Chicago, infrequent. (Hill)
Whiting, Ind., occasional.

1203. HYPERICUM MAJUS (Gray) Brit.

LARGE CANADIAN ST. JOHN'S-WORT.

Moist, open, especially sandy, soils, common.
Very abundant in the sandy swales of the Dune region.

1204. HYPERICUM CANADENSE L.

CANADIAN ST. JOHN'S-WORT.

Wet, sandy soil. More abundant than the last species. Common in Lake and Porter Cos., Ind.

1205. HYPERICUM DRUMMONDII (Grev. & Hook) T. & G.

DRUMMOND'S ST. JOHN'S-WORT.

Gravel hill at Warrenville, Du Page Co. A single station, very rare. (Umbach)

1907.* HYPERICUM GENTIANOIDES (L.) B. S. P. Sarothra gentianoides L.

ORANGE GRASS. PINWEED.

Moist, sandy soil, Clarke Junction and east.

1206. HYPERICUM VIRGINICUM L. Triadenum virginicum (L.) Raf.

MARSH ST. JOHN'S-WORT.

Marshes, very common. Often growing to the exclusion of other plants. Brilliant colors are assumed in late Autumn.

*Serial number and citation were omitted.

ELATINACEAE.

WATERWORTS.

Minute marsh annuals, usually overlooked.

1207. ELATINE AMERICANA (Pursh) Arn.

Pond and small-lake margins, especially eastward. Insignificant, rarely discovered by the collector. To the casual observer appears to be small weed seedlings thickly covering the mud pond margin.

CISTACEAE.

ROCK-ROSES.

Low shrubs or herbs with regular flowers, indefinite stamens, a persistent calyx, and fruit a 3–5 celled capsule.

160 species of the northern hemisphere, with some 9 species in our district.

1208. HELIANTHEMUM CANADENSE (L.) Michx. Crocanthemum canadense (L.) Brit.

FROST WEED. ROCK-ROSE.

Dry, gravelly or sandy knolls, common, both north at Waukegan and southeast in the dunes.

1209. HELIANTHEMUM MAJUS B.S.P. Crocanthemum majus (L.) Brit.

HOARY FROST WEED. ROCK-ROSE.

Dry, sandy soils southeast, frequent. The two species are commonly confused and are easily listed as one.

1210. HUDSONIA TOMENTOSA Nutt.

WOOLLY HUDSONIA. FALSE HEATHER.

Dune Park and vicinity. Common on sandy slopes near the lake. Miller. Liverpool or East Gary and vicinity on sides of R. R. cuttings; this is the station farthest from the lake. (Hill)

Most abundant in the Dune Park district.

1211. LECHEA VILLOSA Ell. L. major Michx.

HAIRY PINWEED.

Sterile soils, common southeast and on the Waukegan flats.

Our most abundant and generally distributed species.

1212. LECHEA MINOR L.

SMALL PINWEED.

Dry clay soil or sandy soils, very common. Clarke, Miller, Dune Park, Ind.

Once seen in flower, Sept. 16, 1882. Petals three, eliptic, dark red to purple, paler at base. Stigmas white plumose. A very pretty species when seen in full bloom, covered with numerous flowers. This is rare, as the flowers last but a short time and apparently open only in the full light of the sun or about midday. (Hill)

1213. LECHEA INTERMEDIA Leggett.

LARGE POD PINWEED.

About the range of L. minor but very rare, growing in the shade of blueberries, huckleberries and chokeberries. (Hill)

Typical according to Leggett.

1214. LECHEA STRICTA Leggett.

BUSHY PINWEED.

Frequent in open sandy soils, from Evanston south, and southeast in Indiana. The common species in Indiana.

1215. LECHEA MARITIMA Leggett.

BEACH PINWEED.

Rare near Pine Station. (Higley) Prof. Hill identified the specimen and says, "may be looked for toward Lake Michigan."

Collectors ought to carefully note all specimens of Lechea, as Atlantic Coast species found would indicate further extensions of eastern forms.

NOTE:—As two species of Lechea thought to be peculiar to the Atlantic Coast regions have now been found here, others may be sought for, particularly L. racemulosa, Michx., which grows in similar situations. It would be well for local collectors to carefully note all forms, as the genus is a difficult one and unexpected finds may result. One more species occurs in the west, not far from our bounds, L. tenuifolia, Michx., which was gathered in the sand barrens of Kankakee, Ill., and of which specimens have been received from Mr. M. S. Bebb, from near Rockford, Ill. (Hill)

1216. LECHEA LEGGETTII Brit. & Holl.

LEGGETT'S PINWEED.

West Pullman, Ill., in sandy open ground. (Hill)

SPECIAL KEY TO THE VIOLETS

A	Flowers yellow	B	
A	Flowers white	C	
A	Flowers blue or violet	H	
B	Softly pubescent; stem nearly solitary, leafy near summit	Downy Yellow Violet	1236
B	Nearly smooth; stems generally several and leafy	Smooth Yellow Violet	1237
C	Leaves lanceolate, all from rhizome	Lance Leaved Violet	1230
C	Leaves cordate to kidney-form	D	
D	Leafy stemmed	E	
D	Leaves all from ground	F	
E	Flowers tinged outside with violet, lower petal with yellow, dark lined	Canadian Violet	1238
E	Flowers not thus variegated	Striate Violet	1239
F	Leaves smooth on both sides; leaf stalks with scattered hairs	Northern White Violet	1232
F	Leaves pubescent on one or both sides	G	
G	Smooth except upper surface of leaves; lateral petals beardless	Sweet White Violet	1233
G	Generally pubescent; lateral petals bearded	Large Leaved White Violet	1234
H	Stemless (so-called)	I	
H	Leafy stemmed	R	
I	Leaves palmately cleft into narrow segments	J	
I	Leaves palmately lobed into broad segments, flowers bearded	Palmate Violet	1224
I	Leaves cordate to kidney-form, toothed	L	
J	Two upper petals deep purple, the others light violet; beardless	Pansy Violet	1219
J	Petals similar in color	K	
K	Same as Pansy Violet, but one colored	Bird-Foot Violet	1218
K	Plant usually smooth; flowers very deep violet; lateral petals bearded	Larkspur Violet	1229
L	Leaves smooth, oblong, incised, lobed at cordate base	Arrow Leaved Violet	1228
L	Leaves broad, not thus at base	M	
M	Plants generally hairy	N	
M	Plants largely or altogether smooth	O	
N	Hairs long, copious; leaves large, cordate, kidney-form	Hairy Wood Violet	1225
N	Hairs short, appressed; leaves oblong-ovate	Ovate Leaved Violet	1227
O	Cleistogamous flowers with green capsules	P	
O	Cleistogamous flowers with purplish capsules	Q	
P	Spurred petal smooth; plants of marshes	Hooded Violet	1220
P	Spurred petal villous; plants of bogs	Northern Bog Violet	1221
Q	Leaves broad, cordate, pointed	Common Blue Violet	1222
R	Flower spur short; flowers small, pale, unspotted	Dog Violet	1240
R	Flower spur very long; flowers medium, dark spotted	Long Spur Violet	1241



WOODRUFF

BIRD–FOOT VIOLETS (*Viola pedata linearíloba*)

VIOLACEAE.

VIOLETS.

Herbs with irregular one-spurred corolla of five petals, five stamens and a single 1-celled 3-valved ovary. Leaves alternate; flowers axillary or seemingly from the root.

Three-hundred and twenty-five species, widely distributed. There are 25 in our district or one-thirteenth of the total. Our region is rich in these fine plants.

1217. HYBANTHUS CONCOLOR (Forst.) Spreng. Cubelium concolor (Forst) Raf.

GREEN VIOLET.

Woods of Chesterton and eastward. (Cowles)

A rare plant, becoming frequent farther south.

1218. VIOLA PEDATA LINEARILOBA DC.

BIRD-FOOT VIOLET.

Dry, sandy ridges north and southeast. Very common in the sands of the Dunes, with often very large plants with fifteen to thirty great blooms. Attempts at transplanting have always failed.

1219. VIOLA PEDATA BICOLOR Pursh. VIOLA PEDATA L.

PANSY VIOLET. BIRD-FOOT VIOLET.

Dry slopes near Pine and Miller, rare. (Hill, Umbach) Reported from Gary by Clute.

Probably the original type form of V. pedata L. but now placed as a variety. To show the scarcity of this color-form it has never been seen in our area by the writer. A patch once discovered in Fulton Co., on the Spoon River bluffs, covered twenty-five square rods and had hundreds of plants.

1220. VIOLA CUCULLATA Ait.

HOODED VIOLET.

Open marshes and wet lands, frequent. Generally not distinguished from V. papilionacea, the latter being very much more abundant. Usually in peaty soils. (Hill)

1221. VIOLA NEPHROPHYLLA Greene.

NORTHERN BOG VIOLET.

Bogs on the Waukegan flats near Dead River, rare. The only station reported.

1222. VIOLA PAPILIONACEA Pursh.

COMMON BLUE VIOLET.

Moist woods and prairies, very common. The common woodland violet, although found also on open lands. Blooms again in October.



PEPOON

AN AUTUMN GROUP: GOLDEN-RODS, BLUE VERVAIN, MICHAELMAS DAISIES



PEPOON

A SPRINGTIME COMPANY: COMMON BLUE VIOLET, GREAT TRILLIUM, BOX TURTLE

1223. VIOLA AFFINIS Le Conte.

LE CONTE'S VIOLET.

Wet prairies at West Pullman, frequent. (F. S. Johnson)
On the wet flats of the Waukegan moorland, not common.

1224. VIOLA PALMATA L.

PALMATE VIOLET. EARLY VIOLET.

Common on dry prairies west of Chicago and in dry open woodlands north and west.

Very fine examples are found west of the city limits, south of Irving Park Blvd.

1225. VIOLA SORORIA Willd.

HAIRY WOOD VIOLET.

Very abundant in rich woods along the Des Plaines River and the north branch of the Chicago River.

One of our finest violet species and in places exceedingly great in numbers of plants and flowers, tinting the ground.

1226. VIOLA TRILOBA DILATATA.

THREE-LOBED VIOLET.

Woods at Downers Grove, frequent. (Umbach)

The writer has seen these plants and they certainly agree with the description of Brainerd, although out of the proper range.

1227. VIOLA FIMBRIATULA Sm.

OVATE-LEAVED VIOLET. BLUE SAND VIOLET.

Sandy borders of sloughs, near Clarke, Ind., frequent.
Sandy soil, Rogers Park. (Mrs. Chase)
Lemont, frequent. (Umbach)

A very abundant violet on the sandy loam soils bordering depressions in southwestern Michigan. The flowering plants are very small, the fruiting condition large and robust; the two shapes very dissimilar in size.

1228. VIOLA SAGITTATA Ait.

ARROW VIOLET.

Moist sandy soil, very abundant. Very abundant southeast in Indiana.
Our deepest colored species, the flowers being very beautiful.
Very common in the sand flats of the Waukegan moorland.

1229. VIOLA PEDATIFIDA G. Don.

LARKSPUR VIOLET. PRAIRIE VIOLET.

Prairies surrounding Chicago, common. Very variable in leaf. A form on the prairies west has leaves with much broader lobes.

1230. VIOLA LANCEOLATA L.

LANCE VIOLET.

Sandy marshes of Waukegan and Rogers Park. Abundant as a zone plant about ponds and wet sloughs southeast.

The flowering plants are often very small, while the fruiting forms are often much enlarged with elongated leaves. The marshes near Dune Park are favorable localities for this interesting white species.

1231. VIOLA PRIMULIFOLIA L.

PRIMROSE VIOLET.

Prof. Hill found a plant on the Calumet flat southwest of Miller, Ind., that seems certainly to be this species. One of the rare cases of extra limital distribution that makes the southern end of L. Michigan such a meeting place of all kinds of normally widely separated forms.

Woods at Garden Park. (Brennan)

Not found by any of our later collectors.

1232. VIOLA PALLENS (Banks) Brainerd.

NORTHERN WHITE VIOLET.

Open springy bogs southeast. Also in Tamarack Swamp at Mineral Springs. More common than the next species.

1233. VIOLA BLANDA Willd.

SWEET VIOLET.

Low woods, particularly southeast, very abundant. Rogers Park, in a moist woodland west of Ridge on Western Ave., rare.

1234. VIOLA INCOGNITA Brainerd.

LARGE-LEAVED WHITE VIOLET.

Common in all localities where the small white violets grow and for many years called simply V. blanda. The Mineral Springs Tamarack Swamp is a typical locality.

1235. VIOLA ODORATA L.

ENGLISH VIOLET.

Frequent about houses. Established at Wheaton and gradually spreading. (Moffatt)

1236. VIOLA PUBESCENS Ait.

DOWNY YELLOW VIOLET.

Dry, sandy woods southeast. Most common at Miller, Dune Park, Mineral Springs and eastward.

Brainerd does not separate the next plant from this species, not even mentioning it directly as a possible form, but quotes from Gray, as saying of V. scabriuscula that it should be called V. glabriuscula, as the form is not rough.

1237. VIOLA SCABRIUSCULA Schwein. V. eriocarpa Schwein.

SMOOTH YELLOW VIOLET.

Moist woods throughout, common. Abundant at Bowmanville, Des Plaines valley and North Shore woods.

Britton calls this plant by Schwein's second name and considers it a good species. Others hold that it is doubtless but a smooth form of the preceding species. The above two names by the same authority show the confusion about this plant. Brainerd locates V. eriocarpa as Lat. 35–36½ degrees, between N. Carolina and Oklahoma.

1238. VIOLA CANADENSIS L.

CANADA VIOLET.

In all beech woods, found at Port Chester and Otis, on the east margin of our district.

Very easily cultivated, increasing rapidly.

The writer has a flourishing colony from southwestern Michigan in his Irving Park garden that is certainly V. rugulosa Greene, of Britton and Brown, 2nd Ed.

1239. VIOLA STRIATA Ait.

STRIPED WHITE VIOLET.

Wooded islands in the Des Plaines River at Romeo, common.

Evanston, Wilmette, and Pine, Miller, Ind. Mainly southward and infrequent or rare. (Babcock) (Higley & Raddin)

Collectors today do not find it at the last named stations.

A great colony of this species was found by the writer in Jo Daviess Co., Ill., clothing the foot of a "dripping" cliff on the Mississippi River with a mass of bloom. Truly a remarkable habitat.

1240. VIOLA CONSPERSA Reichenb.

SMALL BLUE VIOLET. AMERICAN DOG VIOLET.

Wet woods throughout, very common. Especially abundant southeast. Our palest violet or blue violet.

1241. VIOLA ROSTRATA Pursh.

LONG SPUR VIOLET.

In beech woods at Otis, Ind., on the east margin of our area. (Hill)

A very fine violet with striking flowers.

Babcock reports it from Miller, 1886.

NOTE:—Mr. F. W. Johnson finds several interesting hybrids in the Beverly Hills and W. Pullman region. Determined by E. Brainerd. Viola pedatifida x sororia, frequent in W. Pullman, Beverly Hills, Palos Park. Viola pedatifida x sagittata, Morgan Park and Mokena. Doubtless other hybrids occur and ought to be searched for.



PEPOON

THE PRICKLY PEAR AT HOME IN THE DUNES (*Opuntia Raphinesquii*)

LOASACEAE.

LOASAS.

Herbs with rough or stinging pubescence.

200 species, all but one being American, with 1 here as an introduced plant.

1242. MENTZELIA NUDA T. & G. Nuttalia nuda (Pursh.) Greene.

PRAIRIE LILY.

Sante Fe Ry. at Lyons. (Hill) A single plant, doubtless introduced. Such a waif may never again appear in our flora.

ORDER 24—OPUNTIALES

One Family, the Cactus, mostly American. Characters of Family.

CACTACEAE.

CACTI.

Fleshy plants mostly leafless or with small ones. Generally abundantly spiny and bristly; stems often jointed; flowers commonly large and showy, many-petaled; stamens many; fruit generally pulpy.

1000 species, with 1 in our district.

1243. OPUNTIA RAFINESQUII Engelm. O. humifusa Raf.

PRICKLY PEAR.

Very abundant in the sandy region southeast. Also near Dead River north of Waukegan. Originally on sandy ridge north of Graceland Cemetery, Chicago. The winter of 1910 nearly exterminated the plant but it is now, 1926, abundant again.

This winter of 1910 killed many well-established, introduced plants.

ORDER 25—THYMELAEALES

Two Families, the Mezereum and the Oleaster.

THYMELAEACEAE.

MEZEREUMS.

Shrubs with acrid and tough bark. Entire leaves and perfect regular apetalous flowers, with colored calyx. Fruit a drupe.

425 species, most abundant in Australia and Africa, with 1 in our district.

1244. DIRCA PALUSTRIS L.

LEATHER WOOD. MOOSE WOOD.

Damp woods at Otis, Ind., on the eastern limit of our district.

Found also in damp woods on Spring Brook near the Sag, in connection with Asimina. (Hill) See Asimina.

By far our rarest shrub.

In Jo Daviess Co., Ill., found only on cool shaded bluffs having an inclination of 45 degrees. In Champaign Co., Ill., on the steep gravel banks of Salt Fork.

ELAEAGNACEAE.

OLEASTERS.

Shrubs or small trees, silvery, scurfy. Fruit a berry.

Twenty species, widely distributed, with one in our district.

1245. SHEPHERDIA CANADENSIS (L.) Nutt. Leopargyrea canadensis (L.) Greene.

EASTERN BUFFALO BERRY.

Bluffs of Lake Michigan north and slough banks southeast, common.

ORDER 26—MYRTALES

Five Families, in our part of the United States, but well represented in the Tropics by many groups. The Loosestrifes, Melastoma, Evening Primrose, Water Nut and Water Milfoil.

LYTHRACEAE.

LOOSESTRIFES.

Herbs, opposite leaved, with mostly regular and perfect flowers, persistent calyx and a many-seeded capsule.

350 species of wide distribution, with 7 in our district.

1246. DIDIPLIS DIANDRA (Nutt.) Wood.

WATER PURSLANE.

Calumet Lake in deep water.

North branch of the Chicago River near Oak Glen. (Raddin)

1247. ROTALA RAMOSIOR (L.) Koehne.

TOOTH CUP. WHEEL-WORT.

Low, sandy soils of Miller and Dune Park, common.

1248. AMMANNIA COCCINEA Rottb.

SCARLET LOOSESTRIFE.

Shores of ponds and sloughs southeast, very rare.

1249. DECODON VERTICILLATUS (L.) Ell.

SWAMP LOOSESTRIFE. WATER WILLOW.

Pond borders in shoal water eastward. Des Plaines River at Romeo, rather common. (Umbach)

From Summit down the Des Plaines, becoming abundant.

1250. LYTHRUM ALATUM Pursh.

LOOSESTRIFE.

Swamps, ditches and low meadows, common.

Forms with white flowers occasional.

1251. LYTHRUM SALICARIA L.

SPIKED LOOSESTRIFE.

Wet ground near Wabash Ry. west of Aetna, Ind. A few plants in 1900.

1252. CUPHEA PETIOLATA (L.) Koehne. Parsonia petiolata (L.) Rusby.

TAR WEED. CLAMMY CUPHEA.

Prairies near Evanston, very rare. (Johnson)

No one else seems to have found this rare plant in our district.

MELASTOMACEAE.

MELASTOMAS.

Mostly tropical American, one genus, the following, in North America.

2,500 species known, with 1 in our district.

1253. RHEXIA VIRGINICA L.

MEADOW BEAUTY. DEER GRASS.

Sandy, wet lands. Abundant from Clarke and Miller eastward.

Also in the Waukegan moors. A handsome plant when in full bloom.

ONAGRACEAE.

EVENING PRIMROSES.

Herbs with 4-parted regular flowers; calyx adherent to the ovary; leaves opposite or alternate.

350 species, widely distributed, with 26 species in our area.

1254. LUDVIGIA ALTERNIFOLIA L. Ludwigia in Britton and Brown.

SEED-BOX. RATTLE-BOX.

Sandy shores of ponds and lakes, Miller, Dune Park and eastward. Abundant.

1255. LUDVIGIA SPHAEROCARPA Ell.

GLOBE LUDVIGIA. FALSE LOOSESTRIFE.

Border of swamp between Pine and Clarke, Ind. (Umbach, Moffatt)

1256. LUDVIGIA POLYCARPA S. & P.

MANY-FRUITED LUDVIGIA. FALSE LOOSESTRIFE.

Wet places throughout, frequent.

1257. LUDVIGIA PALUSTRIS (L.) Ell. Isnardia palustris L.

MARSH PURSLANE. WATER PURSLANE.

Muddy shores of ponds, ditches and sloughs. Common throughout but more abundant eastward.

1258. EPILOBIUM ANGUSTIFOLIUM L. Chamaenerion (L.) Scop.

GREAT WILLOW HERB. FIRE WEED. WICOPY. SALLY-BLOOM.

Low grounds and clearings throughout, frequent. More common in the sand regions southeast.

Delights in burnt-over ground.

Very showy, sometimes white; a noted honey plant.

1259. EPILOBIUM MOLLE Torr. E. strictum Muhl.

DOWNY WILLOW-HERB. SOFT WILLOW-HERB.

Tamarack bog southeast of Miller. (Hill)

Mineral Springs in tamarack swamp. (Cowles, Pepoon)

A rare plant with us.

1260. EPILOBIUM DENSUM Raf. E. lineare Muhl.

LINEAR-LEAVED WILLOW-HERB. BOG WILLOW-HERB.

Bogs from Miller eastward. Common in southwestern Michigan.

Found in bogs at Warrenville. (Umbach)

In prairies, bogs, generally common throughout, particularly on the "quaking bogs" near streams.

1261. EPILOBIUM COLORATUM Muhl.

PURPLE-LEAVED WILLOW-HERB. CINNAMON WILLOW-HERB.

Common in low ground. Rogers Park. (Raddin) Naperville. (Umbach)

Marshes of the southeast and the prairie marshes southwest, frequent.

1905.* EPILOBIUM PALUSTRE L.

WILLOW-HERB.

Marshes, in cold springy soil; frequent, particularly north and west.

1262. EPILOBIUM ADENOCAULON Hau.

NORTHERN WILLOW-HERB. WILLOW-HERB.

Low rich ground, frequent in all the districts.

Pine, Miller and eastward in the damp sandy flats. (Hill, Umbach)

Abundant on the Waukegan moorland and along all the north shore ravine brooklets. Skokie Marsh.

1263. OENOTHERA CRUCIATA Nutt.

SMALL-FLOWERED OR CROSS EVENING PRIMROSE.

Sandy soil on the Belt Ry. south of Brighton Park.

Romeo, Lemont, Wheatland, fairly common. (Umbach)

Reported by Hill, Babcock and Higley from Chicago and vicinity.

* Serial number and citation were omitted.

1264. OENOTHERA MURICATA L.

NORTHERN EVENING PRIMROSE. BRISTLY OENOTHERA.

Sandy soils near Lake Michigan. Commonly confused with the next. A large proportion of the specimens examined proved to be this instead of O. biennis.

1265. OENOTHERA BIENNIS L.

EVENING PRIMROSE.

Common as a weed in all waste dry open lands. Many so designated are doubtless the preceding species.

1266. OENOTHERA GRANDIFLORA Ait.

GREAT-FLOWERED EVENING PRIMROSE.

Babcock says, "in rich soil, frequent," but the plant is exceedingly rare and always, doubtless, an escape from cultivation, as it is a southern species.

Large-flowered forms of the preceding species are at times mistaken for this plant.

1267. OENOTHERA RHOMBIPETALA Nutt. Raimannia rhombipetala (Nutt.) Rose.

RHOMBIC EVENING PRIMROSE. SAND PRIMROSE.

Very abundant in sandy soil near Lake Michigan from Indiana to Waukegan.

Very variable in size of flower.

Never found away from very sandy locations.

1268. OENOTHERA PALLIDA Lindl. Anogra albicaulis (Pursh.) Brit.

PALE STEMMED EVENING PRIMROSE.

Occasional along the railroads southwest of Chicago. (Clute)

1269. OENOTHERA PUMILA L. Kneiffia pumila (L.) Spach.

SMALL SUNDROPS. DWARF OENOTHERA.

Gibson, Ind., Palatine and Des Plaines, rare. (Babcock)

Abundant in an old field at Griffith, Ind. (Hill)

Occasional on Waukegan moorland.

1270. OENOTHERA FRUTICOSA L. Kneiffia fruticosa (L.) Raiman.

SUNDROPS.

Very common on moist prairies throughout. A showy plant.

Very abundant along the Calumets and on the flat lands adjacent to Chicago.

Easily grown in the flower garden.

1271. OENOTHERA LINEARIS Michx. Kneiffia linearis (Michx.) Spach.

NARROW-LEAVED SUNDROPS.

Low pine woods at Dune Park. May be mistaken for O. fruticosa, which it resembles. (Hill)

Wet prairies between Lyons and Summit.

1272. OENOTHERA SPECIOSA Nutt. Hartmannia speciosa Endl.

SHOWY OR ROSE EVENING PRIMROSE.

Two clumps, one on the Belt Ry. south of Summit and the other on the Wabash Ry. west of Aetna, Ind.; very showy.

A patch twenty feet square near Church St., Evanston, well established. (Raddin)

Tolleston, Ind. (Umbach) Evidently a railroad introduction, for its home is the southwest as far as Mexico.

1273. OENOTHERA SERRULATA Nutt. Meriolix (Nutt.) Walp.

TOOTH-LEAVED EVENING PRIMROSE.

A single plant on C. & A. Ry. at Brighton Park. (Moffatt) A clump on a dry barren knoll, two miles west of Dunning and south of Irving Park.

Several plants on Wabash Ry. near Aetna. (Umbach)

1274. GAURA BIENNIS L.

COMMON GAURA.

Dry, open banks and roadsides, occasional throughout.

1275. GAURA PARVIFLORA Dougl.

SMALL-FLOWERED GAURA.

Along railroads from the west, very rare. Romeo and vicinity.

C. & A., two miles east of Romeo. (Hill) A number of thrifty plants associated with G. biennis and seemingly with as much appearance of being native as the latter.

1276. GAURA COCCINEA Pursh.

SCARLET GAURA.

A patch on the M. C. Ry. at Crissman, Ind. (Hill)

1277. CIRCAEA LUTETIANA L.

ENCHANTER'S NIGHTSHADE.

Rich woods, common north and west.

Particularly abundant in the Des Plaines River region.

1278. CIRCAEA INTERMEDIA Ehrh.

INTERMEDIATE ENCHANTER'S NIGHTSHADE.

Damp, dark woods. Niles. Berry Lake, Ind. Evanston. Arlington Heights. Rare. Moist banks, Lake Bluff. (Hill)

Tamarack Swamp of Mineral Springs, Ind., rather common.

HALORAGIDACEAE.

WATER MILFOIL.

Aquatic or marsh plants with inconspicuous sessile flowers; calyx adherent; leaves often dissected.

100 species, widely distributed, with 4 in our district.

1279. MYRIOPHYLLUM SPICATUM L.

SPIKED WATER MILFOIL.

In streams and ponds southeast. Frequent in the Dunes.
Abundant weed in Garfield Park ponds. (Mrs. Chase)
Warrenville. Naperville. (Umbach)

1280. MYRIOPHYLLUM VERTICILLATUM L.

WHORLED WATER MILFOIL.

Sluggish waters, common throughout the area.

1281. MYRIOPHYLLUM HETEROPHYLLUM Michx.

VARIOUS LEAVED WATER MILFOIL.

Stagnant waters near Miller, Ind. (Hill) Clarke and Gary. (Umbach)

1282. PROSERPINICA PALUSTRIS L.

MERMAID WEED.

Shoal waters in sloughs, common. Particularly abundant southeastward.

SPECIAL KEY TO THE GINSENG FAMILY

A	Leaves whorled at the top of stem, 3–7 foliate.	B	
A	Leaves borne alternately on the stem . . .	C	
B	Leaves large, usually of 5 thin, oblong leaflets .	Ginseng	1286
B	Leaves small, usually of 3, occasionally 5, leaflets	Ground Nut. . . .	1287
C	Umbels in compound panicle; leaves decompound, very large	Spikenard	1283
C	Umbels few, 3–7 in a corymb.	D	
D	Stem bristly, leafy.	Bristly Sarsaparilla. .	1284
D	Stem very short, bristles absent, one leaved umbels on a naked scape	Wild Sarsaparilla . .	1285

ORDER 27—UMBELLALES

Three Families, the Aralia, Carrot, and Cornel.

ARALIACEAE.

GINSENGS.

Plants of various aspect, much like the Umbelliferae. Usually more than two styles; fruit a drupe.

450 species, widely distributed, with 5 in our district.

1283. ARALIA RACEMOSA L.

AMERICAN SPIKENARD. SPIGNET. LIFE-OF-MAN.

Rich woods. Common along the Des Plaines River and in the Niles woods. Occasional southeast.

In the rich woods of the north branch of the Chicago River, frequent. Easily grown in the garden.

1284. ARALIA HISPIDA Vent.

BRISTLY SARSAPARILLA.

Wooded swamps southeast. Frequent near Dune Park and Miller, Ind.

1285. ARALIA NUDICAULIS L.

WILD SARSAPARILLA.

Wooded banks throughout, common. Very often the leaves are mistaken for those of the ginseng.

1286. PANAX QUINQUEFOLIUM L.

GINSENG. SANG.

Rich woods of the Des Plaines valley and north, very rare or exterminated.

Warrenville and Wheatland, in rich woods, frequent. (Umbach)

Highland Park, Riverside, Palatine, Forest Hill. Everywhere very rare. (Hill) Mount Forest Island, very rare.

1287. PANAX TRIFOLIUM L.

GROUND NUT.

Casella and Miller, Ind., in moist rich woods, rare. (Babcock)

Not reported by collectors generally.

Abundant in beech woods from our eastern limits eastward into Indiana and Michigan.

SPECIAL KEY TO THE CARROT FAMILY

	Plants with all or the root leaves simple . . .	A	
	Plants with compound leaves, except in 1288 . .	C	
A	Low or prostrate plants	B	
A	Erect plants, the lower leaves cordate, the upper 3-parted; flowers yellow	Heart Leaved Meadow Parsnip	1308
B	Leaves peltate, toothed.	Penny Wort 1 . . .	1293
B	Leaves not peltate, toothed	Penny Wort 2 . . .	1294
C	Plants with greenish flowers	D	
C	Plants with white flowers.	G	
C	Plants with yellow flowers.	T	
D	Plants very coarse and tall, with large, hollow, smooth stems.	Angelica	1319
D	Plants low, not coarse.	E	
E	Staminate flowers in same head with pistillate; leaves palmately 3–5 divided	Black Snakeroot . .	1291
E	Staminate flowers in separate small heads . .	F	
F	Petals and anthers greenish white; calyx lobes pointed	Maryland Snakeroot .	1289
F	Petals and anthers greenish-yellow; calyx lobes blunt	Clustered Snakeroot .	1290
G	Leaves simple, linear, fringed; umbels dense head-like	Button Snakeroot . .	1288
G	Leaves compound	H	
H	Leaves 3-foliate or simply ternate	I	
H	Leaves simply pinnate	J	
H	Leaves decompound	L	
I	Leaf segments thin, smooth, toothed or cut; umbels small, few rayed	Honewort	1306
I	Leaf segments very large, broad, variously toothed, woolly; umbels very large . . .	Cow-Parsnip . . .	1316
J	Leaflets 3–9, narrow, nearly entire, rigid, very smooth	Cowbane.	1317
J	Not as above	K	
K	Leaflets ovate or oblong, deeply serrate or cut.	Water Parsnip . . .	1304
K	Leaflets narrow, linear-lance, sharply serrate, lower often dissected	Water Parsnip . . .	1305
L	Leaf divisions very finely cut or small . . .	M	
L	Leaf divisions not thus divided	O	
M	Plants, small, flowering in early spring; flowers very small on leafy stems	Wild Chervil. . . .	1296
M	Plants small, flowering in early spring; flowers on nearly naked stem; basal leaves 2–4 . .	Harbinger of Spring .	1295
M	Plants 2–3 feet tall, late blooming	N	
N	Umbel with a central red flower, large, showy.	Queen Ann's Lace . .	1321
N	Umbel all white; seeds spicy, fragrant . . .	Caraway	1303
O	Plants with licorice odor; fragrant roots. . .	P	

O	Plants not thus	Q	
P	Styles very short, $\frac{1}{24}''$; plant very long-hairy	Sweet Cicely	1297
P	Styles $\frac{1}{8}''$ long; plant usually smooth	Smooth Sweet Cicely	1298
Q	Plants with bulblets in upper leaf axils; leaf segments linear	Bulblet Water Hemlock	1302
Q	Plants not thus	R	
R	Leaf segments linear; plants tall, smooth, green	Eulophus	1310
R	Leaf segments broad; stems with red	S	
S	Stems red spotted; leaves much dissected; tall; waste places	Poison Hemlock	1300
S	Stems red streaked; leaves bi- or tri-pinnate; tall; marshes	Water Hemlock	1301
T	Leaves dissected into filiform segments	U	
T	Leaf segments not filiform or linear	V	
U	Plants, umbels and flowers small and delicate	Spermolepis	1299
U	Plants, umbels and flowers conspicuously large; strongly odorous	Dill	1315
V	Leaves pinnate with large, toothed leaflets; umbels large	Parsnip	1313
V	Leaves pinnate with pinnatifid leaflets; umbels small	Prairie Parsley	1314
V	Leaves ternately compound	W	
W	Fruit not flattened; ribs winged	X	
W	Fruit flattened; ribs not winged	Early Meadow Parsnip	1307
X	Leaf segments slightly round toothed; flowers also purple	Meadow Parsnip	1311
X	Leaf segments sharp toothed or cut; stem nodes hairy	Hairy Meadow Parsnip	1312

UMBELLIFERAE. AMMIACEAE.

CARROTS. PARSLEYS.

Herbs, with small, normally 5-parted flowers in umbels; styles two; fruit of two seed-like carpels, ribbed, usually aromatic.

1,600 species, widely distributed, with 34 in our district.

1288. ERYNGIUM YUCCIFOLIUM Michx. E. aquaticum L.

BUTTON SNAKEROOT. RATTLESNAKE MASTER.

Low, open or prairie soils, common; particularly north, west and southwest. Occasional in suitable locations southeast.

1289. SANICULA MARILANDICA L.

BLACK SNAKEROOT. SANICLE.

Woods north and west, common everywhere. Becomes a weed in the garden shrubbery.

1290. SANICULA GREGARIA Bick.

CLUSTERED SNAKEROOT.

Woods of Naperville. (Umbach) Woods of Ravenswood. (Gates, 1907)
In the Forest Preserve at Edgebrook.

1291. SANICULA CANADENSIS L.

SNAKEROOT.

More common than the last, in similar locations.
With the first and equally abundant.

1292. SANICULA TRIFOLIATA Bick.

LARGE-FRUITED SNAKEROOT.

Woods along the Du Page River.

1293. HYDROCOTYLE UMBELLATA L.

MARSH PENNYWORT.

Sandy marshes, common eastward. Miller, Dune Park.

1294. HYDROCOTYLE AMERICANA L.

AMERICAN MARSH PENNYWORT.

Damp woods, infrequent or rare. (Babcock) Seems to be confused with the last. Of doubtful occurrence.

1295. ERIGENIA BULBOSA (Michx.) Nutt.

HARBINGER OF SPRING.

Woods northeast of Naperville, on margin of our area. (Umbach)
Woods of Du Page River valley south of Naperville.
Chesterton. (Hill)

1296. CHAEROPHYLLUM PROCUMBENS (L.) Crantz.

WILD CHERVIL.

Common in rich woods of Des Plaines River. Very abundant east of the Des Plaines at Turner Park, on the C. M. & St. P. Ry.

1297. OSMORHIZA CLAYTONI (Michx.) Clarke. Washingtonia Claytoni (Michx.) Brit.

HAIRY SWEET CICELY.

Rich woods; common in all of our wooded regions.

1298. OSMORHIZA LONGISTYLIS (Torr.) DC. Washingtonia (Torr.) Brit.

SMOOTH SWEET CICELY.

Woods, with the last but not as common.

1299. SPERMOLEPIS PATENS (Nutt.) Rob.

SPREADING SPERMOLEPIS.

B. & O. Ry. at crossing of the Little Calumet River, northeast of Miller; common locally. (Umbach, Pepoon)

1300. CONIUM MACULATUM L.

POISON HEMLOCK.

Babcock says, "waste places, rare. Evanston, Palatine, Riverside." A doubtful plant with us. No one finds it of late years.

1301. CICUTA MACULATA L.

WATER HEMLOCK.

Marshes, very abundant. Often a source of poisoning of horses. Many fatal cases recorded. (See Govt. Bulletin on Poisonous Plants.)

1302. CICUTA BULBIFERA L.

BULBLET WATER HEMLOCK.

Common along the sloughs southeast. Rare elsewhere. On Dead River margin on the Waukegan moorland.

1303. CARUM CARVI L.

CARAWAY.

Roadsides near houses, occasional. Gradually becoming more common.

1304. BERULA ERECTA (Huds.) Coville.

CUT-LEAVED WATER PARSNIP.

Marshes southeast, common. Less frequent elsewhere.

1305. SIUM CICUTAEFOLIUM Schrank. S. lineare Michx.

WATER PARSNIP. HEMLOCK WATER PARSNIP.

Marshes, common throughout our entire area.

1306. CRYPTOTAENIA CANADENSIS (L.) DC. Deringa Kuntze.

HONEWORT.

Woods throughout, common, particularly where the soil is moist. Often weed-like when thoughtlessly introduced to the wild flower garden, where it will outgrow almost any other plant.

1307. ZIZIA AUREA (L.) Koch.

WILD MEADOW PARSNIP. GOLDEN ALEXANDER.

Common in moist prairies and on banks throughout. Higley & Raddin do not mention this species, evidently confusing it with Thaspium, which blooms in summer. This is one of our earliest blooming plants and rather showy when well grown.

1308. ZIZIA CORDATA (Walt.) DC.

HEART-LEAVED MEADOW PARSNIP.

Common on prairies at western limits of our area. Near Wheaton, Lombard and Glen Ellyn.

Naperville and Lisle. (Umbach)

Chicago Heights Forest Preserve, frequent.

1309. TAENIDIA INTEGERRIMA (L.) Drude.

BANK PARSNIP. YELLOW PIMPERNEL.

Wooded banks throughout, common. Very abundant in the sand regions southeast. Also along the Des Plaines. Common on the wooded slopes of the Waukegan dunes.

1310. EULOPHUS AMERICANUS Nutt.

EASTERN EULOPHUS.

Banks in open thickets near Naperville. (Umbach)

Riverside. (Babcock) Romeo and vicinity. A rare plant with us.

1311. THASPIUM AUREUM Nutt. T. trifoliatum (L.) Brit. Var. atropurpureum (Desr.) C. & R.

MEADOW PARSNIP. PURPLE MEADOW PARSNIP.

In the valley of Thorne Creek at Chicago Heights, rare.

Babcock says of this, "with the type, rare," but as the type is plainly Zizia aurea, with its blooming season May, it is hard to locate his stations satisfactorily.

Blooming much later than Zizia.

The flowers are greenish yellow.

1312. THASPIUM BARBINODE (Michx.) Nutt.

HAIRY-JOINTED MEADOW PARSNIP.

Shaded banks of streams, particularly Thorne Creek at Chicago Heights, rare.

1313. PASTINACA SATIVA L.

PARSNIP.

A very common weed of city streets and vacant lots. Becoming common along country roads.

Reputed to be poisonous and occasional newspaper stories tend to support this view but careful experimentation seems to disprove the notion.

1314. POLYTAENIA NUTTALLII DC. Pleiotaenia (DC.) Coult. & Rose.

PRAIRIE PARSLEY.

Barrens of North Shore. Formerly common at Ravenswood. Prairies west of Chicago.

Whiting, Ind. (Babcock) Palos Park. (Umbach)

An abundant plant in northwestern Illinois. A sure sign of "original prairie land."

1315. ANETHUM GRAVEOLENS L.

DILL.

Waste places of Naperville. (Umbach)

Vacant lots and streets. Rare about Chicago.

1316. HERACLEUM LANATUM Michx.

COW-PARSNIP.

Moist woods north and west. Very abundant at Wilmette and along the north branch of the Chicago River. Frequent along the Des Plaines. Occasional southeast.

Very conspicuous in flower. Takes kindly to cultivated life.

1317. OXYPOLIS RIGIDIOR (L.) Coult. & Rose. O. rigidius (L.) Raf.

OXYPOLIS. COW-BANE.

Swamps from Palos Park (Umbach) to Miller. Dune Park and east. Not common.

1318. ANGELICA VILLOSA (Walt.) B. S. P.

HAIRY ANGELICA.

Woods of Palatine, Arlington Heights, Riverside. (Higley)

1319. ANGELICA ATROPURPUREA L.

GREAT ANGELICA. PURPLE ANGELICA.

Marshes and moist prairies, common. Often very large. Powerfully odorous.

A delightful candied preserve is made from the young and brittle stems of early May. Do not mistake the great hairy hollow stems of cow-parsnip for it; there is a decided difference in taste and looks also.

1320. CONIOSELINUM CHINENSE (L.) B. S. P.

HEMLOCK PARSLEY.

Wooded swamps at our eastern margin, occasional.



POSS



POSS

SHADE LOVING PLANTS

COW PARSNIPS (*Heracleum lanatum*) MOONWORT FERN (*Botrychium obliguum*)

1321. DAUCUS CAROTA L.

CARROT. QUEEN ANN'S LACE.

Fields. Becoming common locally throughout our area. Increasing in numbers yearly, particularly in dry soils. Has already, 1926, over-run much of central Michigan.

CORNACEAE.

DOGWOODS. CORNELS.

Shrubs or trees with mostly opposite leaves and small 4 to 5 parted flowers, in cysmic umbels.

85 species, most abundant in the Northern Hemisphere, with 11 in our area.

1322. CORNUS CANADENSIS L. Chamaepericlymenum canadense (L.) Asche. & Graern.

BUNCH-BERRY. DWARF CORNEL.

Tamarack marsh one mile southwest of Miller, Ind. A small number of plants.
In birch and tamarack swamp at Mineral Springs. Common. (Hill, Pepoon)
Reported by Boltwood as found at Rogers Park.

1323. CORNUS FLORIDA L. Cynoxylon floridum (L.) Raf.

FLOWERING DOGWOOD.

Found at Dune Park and east of Miller along Long Lake and thence eastward, becoming common in Porter Co., Ind.

Babcock says, "infrequent in north part of Cook." This must be an error, as no one has ever found it there in any recent exploration.

1324. CORNUS CIRCINATA L'Her. Cornus rugosa Lam.

ROUND-LEAVED DOGWOOD.

Common in the ravines north of Wilmette and along the sloughs southeast.
Along the Skokie.
Common in cultivation.

1325. CORNUS AMOMUM Mill.

KINNIKINNIK. SILKY CORNEL.

Moist lands of Miller and east. Not common.
Used by Indian peoples as an ingredient in their tobacco ceremonial smoking.

1326. CORNUS BAILEYI Coult. & Evans.

SAND DUNE DOGWOOD.

Sand dunes of Miller, Dune Park and east, common. Never far from Lake Michigan.

1327. CORNUS STOLONIFERA Michx.

RED OSIER DOGWOOD.

Low grounds, particularly common near Lake Michigan but found in suitable situations everywhere.
Common in cultivation.



WOODRUFF

DOGWOOD IN MAY (*Cornus florida*)

1328. CORNUS PANICULATA L'Her. Cornus femina Miller. C. candidissima Marsh.

PIGEON-BERRY. WHITE CORNEL.

Rich thickets, common everywhere throughout the area.

Our abundant representative of the genus.

1329. CORNUS ALTERNIFOLIA L. f.

GREEN OSIER. PURPLE DOGWOOD.

Banks and wooded bluffs, north and southeast, near Lake Michigan. Also in the Niles woods and along the Des Plaines and Du Page rivers.

One of the cornels attaining tree dimensions and habits.

1330. CORNUS ASPERIFOLIA Michx.

ROUGH-LEAVED CORNEL.

Occasional shrubs from Dune Park, east. Rare.

1331. NYSSA SYLVATICA Marsh.

BLACK GUM. TUPELO. SOUR GUM. PEPPERIDGE.

Marsh borders. Abundant in Lake and Porter Cos., Ind. Some fine trees in a small wooded swamp west of ridge at Rogers Park as late as 1910. The station is now destroyed.

In this small tract were found royal cinnamon and Clayton's ferns, red maple, chokeberry, huckleberry, white violets, Carolina rose and other plants of the Dune swamps.

1332. NYSSA SYLVATICA BIFLORA (Walt.) Sarg. N. biflora Walt.

TWO-FLOWERED BLACK GUM.

Moist margins of swamps. Dune Park, 1912. Rare. (Umbach)

SYMPETALAE OR GAMOPETALAE

Petals wholly or in part united, rarely separate or lacking.

ORDER 28—ERICALES

Plants of various habits included in six Families, the White Alder, Wintergreen, Indian Pipe, Heath, Blueberry, and Diapensia. All are commonly grouped with Heaths (as in Gray, 7th Ed.) except the last.

ERICACEAE.

HEATHS.

Trees and shrubs, mostly evergreen, with urn-like or campanulate flowers. 1420 species, widely distributed, with 23 in our area.

1333. CHIMAPHILA UMBELLATA (L.) Nutt.

PIPSISSEWA. PRINCE'S PINE.

Rich soil on cool wooded banks from Miller eastward. Common locally in small isolated colonies that find just the exacting conditions necessary for growth.

1334. CHIMAPHILA MACULATA (L.) Pursh.

SPOTTED PIPSISSEWA. SPOTTED WINTERGREEN.

Pine woods. Pine, Clarke and east, very rare.

Near shore of Lake Michigan in hollows among the sand hills, associated with Linnaea, northeast of Miller. (Hill)

1335. PYROLA SECUNDA L.

ONE-SIDED SHIN LEAF.

Wooded bank of Calumet north of Miller, Ind. In similar situations elsewhere. Local. Always on north exposure. Plentiful locally.

1336. PYROLA CHLORANTHA Sw.

GREENISH SHIN LEAF.

Open woods in sandy soil. Whiting, Ind., and east, rare. (Babcock) (Hill)

1337. PYROLA ELLIPTICA Nutt.

SHIN LEAF. LARGE-LEAVED SHIN LEAF.

Moist woods throughout, common locally. The generally distributed species found in nearly all damp woodlands in small colonies. A pretty species.



WOODRUFF

SHIN LEAF (*Pyrola elliptica*)

1338. PYROLA AMERICANA Sweet.

EVERGREEN SHIN LEAF. ROUND-LEAVED WINTERGREEN.

Sandy flat woods from Clarke Junction eastward, rare.

Niles woods. (Johnson)

1339. PYROLA ASARIFOLIA Michx.

SHIN LEAF. LIVER-LEAF WINTERGREEN.

Damp base of wooded dune between Miller and Dune Park, near Lake Michigan, rare. (Hill) Located by Babcock in 1886.

1340. MONOTROPA UNIFLORA L.

INDIAN PIPE.

In oak woods. Frequent locally. More abundant south and east. Very common in woods near Grand Calumet, Miller. Scattered clumps are found in all suitable localities. Such a clump was found in 1923 having 146 stems and blossoms and was 14 inches in diameter.

1341. MONOTROPA HYPOPITYS L. Hypopitys americana (DC.) Small.

PINE-SAP. FALSE BEECH-DROPS.

Oak woods at Miller. (Cowles) Very rare. Not found generally. Always very local. Pink forms are as common as the yellow tinted.

1342. CHAMAEDAPHNE CALYCULATA (L.) Moench.

LEATHER LEAF. DWARF CASSANDRA.

Bogs from Clarke Junction southeast, becoming abundant at Miller and Dune Park. Often producing such a dense growth that one can walk on and over the low compact mass of leaves and interwoven branches. Being an evergreen this growth makes an ideal refuge for small animals.

1343. EPIGAEA REPENS L.

TRAILING ARBUTUS. MAY FLOWER.

Cold shaded banks from Dune Park eastward in a few localities. Very local. The Dune Park locality is one mile northeast of station.

Prof. Jensen found a patch near Indiana Harbor in 1903.

North of Porter. Very abundant locally in some of the depressions among the sand hills. (Hill) This station is now destroyed, thus exterminating the nearest outpost of this beautiful plant to the city of Chicago.

Abundant near Mt. Tom at our eastern limit.

1344. GAULTHERIA PROCUMBENS L.

WINTERGREEN.

Cool north slopes of woods in Porter and Lake counties, Ind., very common.

Niles woods, rare. (Miss G. A. Raddin)

A very abundant plant throughout the Indiana region, producing its aromatic scarlet fruits in quantity.

1345. ARCTOSTAPHYLOS UVA-URSI (L.) Spreng. Uva-ursi (L.) Brit.

BEAR BERRY. KINNIKINNIK. BARREN MYRTLE.

Sand dunes and sandy ridges, Waukegan to Chesterton. Abundant at Miller and Dune Park.

Sand ridges, Edgewater, 1895. (Raddin)

Lakeside in 1884. Evanston. (H. & R.) Calvary and south.

The leaves smoked by the red men in mixture with tobacco. See also Silky Cornel.

Colonies are often scantily flowered and fruit bearing.

1346. GAYLUSSACIA BACCATA (Wang.) Koch.

HUCKLEBERRY.

Dry sandy knolls and open wooded hillsides, common throughout. Most abundant in Indiana. Common originally at Bowmanville but now exterminated.

Plentiful on the Waukegan sands.

Variable as to flowers, foliage and fruit. Rarely gathered for food as the berries are too full of seeds.

1347. VACCINIUM PENNSYLVANICUM Lam. V. angustifolium Ait.

LOW BLUEBERRY. EARLY BLUEBERRY.

Dry ridges and slopes from Clarke Junction eastward. Common locally but in general much less abundant than V. vaccillans. May easily be distinguished from the latter by its larger white flowers.

Very variable in foliage and flower.

1348. VACCINIUM PENNSYLVANICUM NIGRUM Wood. V. nigrum (Wood) Brit.

LOW BLACK BLUEBERRY.

Sandy hillsides of Dune Park, not common. (Hill)

Commonly associated with the species and not recognized as varietal by some authorities.

1349. VACCINIUM CANADENSE Kalm.

LOW BLUEBERRY. CANADA BLUEBERRY.

Reported from Thornton (Hill, Babcock) and borders of Lake Calumet, 1882, 1887. May be more common but, if so, not reported.

This species is so easily mistaken for V. pennsylvanicum Lam., that collections from low swamp regions should be examined with care. (Hill)

The pronounced bloom is an aid in identification and it prefers moist or swampy localities. In Michigan found in tamarack swamps.

1350. VACCINIUM VACILLANS Kalm.

LOW BLUEBERRY. HILL BLUEBERRY.

Dry sandy hills and slopes. Common in Lake and Porter Cos., Ind. Originally at Bowmanville but now exterminated.

Our common dry "hill" blueberry.

1351. VACCINIUM CORYMBOSUM L.

HIGH BLUEBERRY. SWAMP BLUEBERRY.

Tamarack swamps and other swamp margins in Lake and Porter Cos., not common. Very variable.

Variable as to size, foliage, and fruit. Occasionally with pink-white very sweet fruit.

One clump in southwestern Michigan yielded ten quarts of fine fruit.

The common source of the commercial blueberries.

1352. VACCINIUM CORYMBOSUM AMOENUM Gray. Not recognized by Britton as distinct.

SWAMP BLUEBERRY.

Miller, Ind. (Hill)

1353. VACCINIUM CORYMBOSUM PALLIDUM Gray. V. pallidum Ait.

PALE HIGH BLUEBERRY.

Miller, Ind., in wet thickets. (Hill)

This station is far removed from Britton's distribution but agrees with that of Gray.

1354. VACCINIUM ATROCOCCUM (Gray) Heller.

BLACK HIGH BLUEBERRY.

Swamps in eastern part of our area, associated with V. corymbosum. (Hill) Specimens from Miller, Prof. Hill notes, "nearly like, if not identical, with var. atrococcum, Gray."

Averages sweeter fruit but does not sell well on account of its off color.

1355. VACCINIUM MACROCARPON Ait. Oxycoccus macrocarpus (Ait.) Pursh.

LARGE CRANBERRY. AMERICAN CRANBERRY.

Clarke Junction and eastward, very local. Several patches near Dune Park.

1356. VACCINIUM OXYCOCCUS L. Oxycoccus oxycoccus (L.) MacM.

SMALL CRANBERRY. EUROPEAN CRANBERRY.

In all swamps of our eastern margin, extending into Michigan.

ORDER 29—PRIMULALES

THE PRIMROSES.

Two Families, the Primrose and the Plumbago.

PRIMULACEAE.

PRIMROSES.

Herbs with simple leaves, perfect regular flowers and stamens as many as and opposite to the petals.

350 species, widely distributed, with 12 in our district.

1357. ANDROSACE OCCIDENTALIS Pursh.

ANDROSACE.

A few plants on the bluffs at Lakeside. (1895, Raddin)

Usually associated with Draba caroliniana in small areas in the vicinity of Joliet. (Clute)

1358. SAMOLUS FLORIBUNDUS H. B. K. S. valerandi americanus Gray.

WATER PIMPERNEL. BROOK WEED.

Calumet region, Skokie Marsh, Thatcher Park; rare.

This plant is doubtless overlooked as there are many suitable places for its growth.

1359. LYSIMACHIA QUADRIFOLIA L.

WHORLED LOOSESTRIFE. CROSS-WORT.

Dry open woods near Lake Michigan. Common both north and southeast.

1360. LYSIMACHIA TERRESTRIS (L.) B. S. P.

RACEMED LOOSESTRIFE. BULB-BEARING LOOSESTRIFE. CANDLES.

Marshes. Abundant in Lake and Porter Cos., Ind.

Very common in the marshy borders of Dead River in the Waukegan moor.

1361. LYSIMACHIA NUMMULARIA L.

MONEYWORT. CREEPING LOOSESTRIFE.

Very abundant on low grounds along the Des Plaines River. Evidently the seeds are scattered by overflow waters.

North branch of the Chicago River in the low bordering land.

Evanston, rare. (Babcock)

This plant grows well in aquaria.

1362. LYSIMACHIA THYRSIFLORA L. Naumbergia (L.) Duby.

TUFTED LOOSESTRIFE. SWAMP LOOSESTRIFE.

Swamps and shoal waters of Lake and Porter Cos., Ind., common.

Also abundant in the waters of Dead River on the Waukegan moorland.

1363. STEIRONEMA CILIATUM (L.) Raf.

FRINGED OR GREAT LOOSESTRIFE.

Low or moist grounds and thickets throughout, common.

1364. STEIRONEMA LANCEOLATUM (Walt.) Gray.

LANCE-LEAVED LOOSESTRIFE.

Moist open prairies and low lands, common.

Abundant in the marshy openings of north shore woods.

1365. STEIRONEMA LANCEOLATUM HYDRIDUM Gray.

HYBRID LOOSESTRIFE.

With the type, rare. (Babcock) Hyde Park and Englewood. (Bastin)

1366. STEIRONEMA QUADRIFLORUM (Sims.) Hitchc.

MARSH LOOSESTRIFE. NARROW-LEAVED LOOSESTRIFE.

Near ponds, sloughs and lakes. Locally abundant throughout, in grassy situations.

The most showy of the genus.

1367. TRIENTALIS AMERICANA (Pers.) Pursh.

STAR FLOWER. CHICKWEED WINTERGREEN.

Low woods surrounding marshes from Clarke Junction eastward. Frequent locally.

Wet woods in Rogers Park in the locality mentioned under Black Gum.

Niles woods. (Raddin)

1368. ANAGALIS ARVENSIS L.

PIMPERNEL. POOR-MAN'S WEATHER GLASS.

Spontaneous in gardens, Normal Park. (Hill)

1369. DODECATHEON MEDIA L.

SHOOTING STAR. AMERICAN COWSLIP.

Open prairies. Abundant all about Chicago.

Variable as to flower color. Often cultivated.

ORDER 30—EBENALES

Four Families in northwestern United States, Soapworts, Ebony, Sweetleaf, and Storax, but no representative in our floral area.

ORDER 31—GENTIANALES

Six Families, the Olive, Logania, Gentian, Buckbean, Dogbane, and Milkweed.

OLEACEAE.

OLIVES.

Trees or shrubs with opposite, pinnate or simple leaves, a four-cleft corolla and a two-celled ovary.

500 species, widely distributed, with 5 in our district.

1370. FRAXINUS AMERICANA L.

WHITE ASH.

In woods everywhere, more or less common. More abundant in moist soils.

Rapidly being killed in the woods adjacent to Chicago by the Oyster-scale insect which also destroys the garden lilac.

1371. FRAXINUS PENNSYLVANICA Marsh.

RED ASH.

Moist sandy soils from Graceland north, occasional. Also in northwestern part of Lake Co., Ind. (Hill)

Rather common at Edgebrook.

1372. FRAXINUS PENNSYLVANICA LANCEOLATA (Borkh) Sarg. F. viridis Michx. f.

GREEN ASH.

Banks of the Des Plaines River, Maywood and south. Banks of streams southeast. (Babcock) Rare.

Plentiful at Glencoe. (Jensen)

Along Du Page at Naperville (Umbach)

Edgebrook along the north branch of the Chicago River, associated with white and blue ash. An interesting collection of the five species all within a few square rods on the border of the river.

1373. FRAXINUS QUADRANGULATA Michx.

BLUE ASH.

A large colony on the Chicago River at Edgebrook. In a precarious state.

Frequent east of the Du Page River below Naperville.

1374. FRAXINUS NIGRA Marsh.

BLACK ASH. HOOP ASH. BASKET ASH.

Swamps, common throughout. Particularly so in Indiana, becoming abundant eastward.

This ash is used by the Michigan Indians in basket weaving.

1375. SYRINGA VULGARIS L.

LILAC.

Occasional about old resident grounds.

Badly infested with the Oyster-scale insect, which is extending its ravages from this base of operations to the white ash of our forests.

GENTIANACEAE.

GENTIANS.

Mostly smooth herbs with bitter juice. Opposite leaves and regular flowers, one-celled ovary, many seeds.

600 species, widely distributed, with 12 in our district.

1376. SABATIA ANGULARIS (L.) Pursh.

ROSE PINK.

Low moist grounds, Pine, Miller, and Dune Park. Common locally.

A handsome plant.



PEPOON



PEPOON

OUR TWO FINEST GENTIANS

SOAPWORT GENTIAN, DUNE PARK
(*Gentiana Saponaria*)

FRINGED GENTIAN, DUNE PARK
(*Gentiana crinita*)

1377. CENTAURIUM PULCHELLUM (Sw.) Druce.

SHOWY CENTAURY.

Frequent west of South Chicago on the prairies. (Hill) This prairie has practically disappeared in these later days.

1378. GENTIANA CRINITA Froel.

FRINGED GENTIAN.

Very abundant on the margins of the sloughs around Clarke Junction but less common eastward. On the lake bluff from Wilmette north.

Also on the Waukegan sand flats.

Rapidly vanishing before the onslaughts of the commercial flower gatherer. Not one today where there were hundreds when the above was first written.

1379. GENTIANA PROCERA Holm.

SMALLER FRINGED GENTIAN.

Rather common on the Waukegan sand flats. Also in the vicinity of Clarke, Miller and Dune Park.

Much less abundant than the preceding species except at the Waukegan station, and like that plant doomed by its beauty.



PEPOON

COLUMBO (*Frasera caroliniensis*)

ONE OF THE VERY RARE PLANTS OF THE AREA, WILLOW SPRINGS

1380. GENTIANA QUINQUEFOLIA L.

FIVE-FLOWERED GENTIAN. STIFF GENTIAN. AGUE WEED.

Ravine sides from Wilmette north. On the Chicago River at Edgebrook. Along the Des Plaines.

Varies much in color of the flowers.

1381. GENTIANA PUBERULA Michx. Dasystephana (Michx.) Small.

ROUGH GENTIAN. DOWNY GENTIAN. PRAIRIE GENTIAN.

Dry barren prairies about Chicago, rare. Grand Crossing, Norwood Park, Palatine. Barrens of the southeast. Frequent on prairies of Jefferson Park. Most common between Miller and Dune Park.

Our deepest tinted species, remaining long in bloom.

1382. GENTIANA SAPONARIA L. Dasystephana (L.) Small.

SOAPWORT GENTIAN. BLUE GENTIAN.

Very abundant from Clarke, Ind., eastward to Dune Park and Chesterton. Common near Miller.

One of our finest species and the bluest of all in color.

1383. GENTIANA ANDREWSII Griseb. Dasystephana (Griseb.) Small.

BARREL OR CLOSED GENTIAN.

Moist grounds throughout, common, especially northward. Formerly very common and abundant at Wilmette.

Very commonly badly insect infested so that very few seeds mature.

1384. GENTIANA FLAVIDA Gray. Dasystephana (Gray) Brit.

YELLOWISH GENTIAN.

Dry banks north and southeast, occasional. Along the Des Plaines River, rare.

1385. FRASERA CAROLINIENSIS Walt.

AMERICAN COLUMBO.

Willow Springs and Summit, rare. (Cowles, Schantz, Graham)

Some very fine blooming plants at the Willow Springs station in 1923; none found since. The immediate station destroyed by a paved highway. The plants were seven feet in height. Takes three or more years from seed to bloom.

1386. BARTONIA VIRGINICA (L.) B.S.P.

YELLOW BARTONIA.

Bogs southeast, common. Originally at S. Evanston. (Babcock)

Prof. Hill notes that the species is prone to associate with Nyssa. The writer finds it commonly associated with Polytrichum or wheat moss in moist sand and peat flats.

So inconspicuous by size and color that it is easily overlooked.



WOODRUFF

BUCK BEANS (*Menyanthes*)

1387. MENYANTHES TRIFOLIATA L.

BUCK BEAN.

Shoal water throughout, near the lake. Particularly common in the Dune region.

Blossoms very early in May.

APOCYNACEAE.

DOGBANES

Herbs with milky juice; opposite leaves and regular 5-parted flowers; ovaries two, distinct.

1050 species with 6 in our district.

1388. VINCA MINOR L.

"MYRTLE." PERIWINKLE.

Common about old residences and cemeteries.

1389. APOCYNUM ANDROSAEMIFOLIUM L.

SPREADING DOGBANE.

Dry open thickets and banks, common.

1390. APOCYNUM MEDIUM Greene.

INTERMEDIATE DOGBANE.

Dryish ground southeast of Miller, Ind. Suggests a hybrid, between A. cannabinum and A. androsaemifolium. (Umbach)

1391. APOCYNUM CANNABINUM L.

INDIAN HEMP.

Low grounds, common everywhere. Exceedingly variable.

1392. APOCYNUM CANNABINUM PUBESCENS (R. Br.) DC. A. pubescens, R. Br.

DOWNY INDIAN HEMP.

In similar situations as the type, common.

1393. APOCYNUM CANNABINUM HYPERICIFOLIUM (Ait.) Gray. A. hypericifolium Ait.

ST. JOHN'S-WORT-LEAVED INDIAN HEMP.

With the former, common.

SPECIAL KEY TO THE MILKWEED FAMILY

A	Flowers green; leaves largely alternate	B	
A	Flowers white or whitish	D	
A	Flowers red or purple	F	
A	Flowers orange; leaves narrow, scattered	Butterfly Milkweed	1394, 1395
B	Flowers in one terminal umbel; leaves opposite, oblong, pubescent	Woolly Green Milkweed	1408
B	Flowers in numerous umbels	C	
C	Leaves very numerous, lance-linear	Florida Green Milkweed	1406
C	Leaves lanceolate, not numerous	Green Milkweed	1407
D	Leaves linear; plants small; flowers and umbels small	Whorled Milkweed	1405
D	Leaves broader, lanceolate to oblong	E	
E	Plant tall; leaves large, oblong; umbels large, loose	Poke Milkweed	1402
E	Plant low; leaves small, lance-oblong; flowers green-white	Oval Leaved Milkweed	1404
F	Leaves usually in fours	Four Leaved Milkweed	1403
F	Leaves in twos	G	
G	Leaves narrow, lanceolate	H	
G	Leaves broad, oblong or oblong-ovate	I	
H	Stem and leaves fine, downy; flowers pale purple	Showy Swamp Milkweed	1398
H	Stem and leaves nearly smooth	Swamp Milkweed	1397
I	Leaves clasping, wavy; plants of dry, sandy soils	Clasping Leaved Milkweed	1401
I	Leaves not clasping	J	
J	Flowers very fragrant, pale purple; common weed	Milkweed	1399
J	Flowers not fragrant	K	
K	Plant and leaves very smooth; leaves heart-shape at base	Prairie Milkweed	1400
K	Plant and leaves more or less soft downy; flowers deep purple	Purple Milkweed	1396

ASCLEPIADACEAE.

MILKWEEDS.

Plants with opposite leaves as a rule; milky juice; regular 5-parted flowers. Closely allied to the Dogbanes.

1900 species, widely distributed, with 16 in our district.

1394. ASCLEPIAS TUBEROSA L.

BUTTERFLY-WEED. PLEURISY-ROOT. YELLOW MILKWEED.

Sandy dry soils, very common. Very variable as to size and color of flowers.

1395. ASCLEPIAS TUBEROSA LUTEA Clute.

YELLOW BUTTERFLY-WEED.

At Tinley Park. (Clute) Occasional wherever the species occurs.

1396. ASCLEPIAS PURPURASCENS L.

PURPLE MILKWEED.

Dry slopes and open woodlands. Frequent, particularly southeast.

Very showy species.

1397. ASCLEPIAS INCARNATA L.

SWAMP MILKWEED.

Swamps, very common everywhere in our area.

1398. ASCLEPIAS INCARNATA PULCHRA (Ehrh.) Pers. A. pulchra Ehrh.

SHOWY SWAMP MILKWEED.

With the type, infrequent. Probably overlooked. Babcock found it as a rare occurrence throughout.

The common form in the east near the Atlantic.

1399. ASCLEPIAS SYRIACA L.

COMMON MILKWEED.

Common everywhere in rich ground.

A bad weed in many pasture lands and orchards.

The young brittle spring shoots used as food like asparagus.

1400. ASCLEPIAS SULLIVANTII Engelm.

SMOOTH MILKWEED. PRAIRIE MILKWEED.

Prairies west of Chicago, occasional.

A strikingly beautiful species. Always indicative of an original prairie soil.

Common between Lyons and Summit. (Graham)

1401. ASCLEPIAS AMPLEXICAULIS Sm.

CLASPING-LEAVED MILKWEED.

Sandy soils, southeast, frequent. Also in sand region of Waukegan. In our district sticking closely to the sands.



PEPOON

A FINE ORANGE MILKWEED OR BUTTERFLY-WEED
(*Asclepias tuberosa*)

1402. ASCLEPIAS PHYTOLACCOIDES Pursh. A. exaltata (L.) Muhl.

POKE MILKWEED. TALL MILKWEED. WHITE MILKWEED. WOOD MILKWEED.

Woods throughout, occasional.

Very beautiful in full bloom with its large loose clusters of pale flowers.

1403. ASCLEPIAS QUADRIFOLIA Jacq.

FOUR-LEAVED MILKWEED.

In woods north and west of Chicago city limits. Westward from Highland Park, very rare. (Jensen) (Jesse Smith)

1404. ASCLEPIAS OVALIFOLIA Dcne.

OVAL-LEAVED MILKWEED.

Babcock found this plant as a rare occurrence at Stony Island, Glencoe, West Ravenswood. Localities probably destroyed, as the species is not reported by present collectors.

Mr. Jesse Smith of Highland Park reports it in 1925 from adjacent woods.

1405. ASCLEPIAS VERTICILLATA L.

WHORLED MILKWEED. SMALL WHITE MILKWEED.

Very abundant in open woods southeast, at Miller and Dune Park. On moist prairies north and west. Common on prairies between Lyons and Summit. (Graham)

1406. ACERATES FLORIDANA (Lam.) Hitchc.

GREEN MILKWEED. FLORIDA MILKWEED.

Moist prairies west and southwest, common. A prairie plant.
Rogers Park. (Raddin)

1407. ACERATES VIRIDIFLORA Ell.

GREEN MILKWEED.

Sand dunes at Pine, Ind., and eastward.
Frequent on the Waukegan moorland.

1408. ACERATES LANUGINOSA (Nutt.) Dcne.

GREEN MILKWEED. WOOLLY MILKWEED.

Prairies, Barrington. (Hill)
Naperville, Wheaton, on dry prairies, becoming more abundant, 1910–1918. (Umbach)

1409. CYNANCHUM NIGRUM L.

BLACK SWALLOW-WORT.

Vacant lots, Ravenswood. Occasional. Doubtless as the vacant places build up, the species will be exterminated.
A number of specimens were found east of Lake View High School as late as 1910.
A single plant found in an alley in Irving Park, 1918.

ORDER 32—POLEMONIALES

A very large group of plants composed of fifteen Families, the Morning Glory, Dodder, Phlox, Water Leaf, Borage, Verbena, Mint, Nightshade, Figwort, Bladderwort, Broom Rape, Bignonia, Martynia, Acanthus, and Lopseed.

CONVOLVULACEAE.

MORNING GLORIES.

Mostly twining or trailing herbs, alternate leaved, with regular five-stamened, usually campanulate, flowers. Fruit a capsule.
1000 species, widely distributed with 14 in our district.

1410. IPOMOEA HEDERACEA Jacq.

MORNING GLORY.

Occasional in waste and vacant lands. Often a weed in cultivated orchards.

1411. IPOMOEA PURPUREA (L.) Roth.

MORNING GLORY.

Vacant lots and streets, occasional.

1412. IPOMOEA PANDURATA (L.) G. F. W. Mey.

MAN-OF-THE-EARTH. WILD POTATO-VINE.

Wildwood, 1899. (Hill) Along the Des Plaines at Riverside. Near the Sag and increasingly frequent southwest.

Used by the Indians as an esteemed food, the great root often weighing ten to twenty pounds.

Showy during the morning hours.

1413. IPOMOEA COCCINEA L. Quamoclit quamoclit (L.) Brit.

CYPRESS VINE.

Thoroughly wild on sand banks at Englewood. (Hill)

1414. CONVOLVULUS SPITHAMAEUS L.

LOW BINDWEED.

Dry sandy ridges and banks, occasional. Very common on the wooded ridge below Mt. Prospect Cemetery. The flowers very large and fine.

1415. CONVOLVULUS SEPIUM L.

BINDWEED. WILD MORNING GLORY.

Low grounds in rich soil, common.

1416. CONVOLVULUS SEPIUM PUBESCENS (Gray) Fernald.

BINDWEED.

With the type, frequent.

1417. CONVOLVULUS ARVENSIS L.

FIELD BINDWEED. SMALL MORNING GLORY.

Very common on St. Paul Ry. at Irving Park and on Lake Shore Ry. at Pine, Ind. Abundant on Alton Ry. at Willow Springs.

Probably on the ballast of all railways.

Common in Irving Park as a roadside weed.

KEY TO THE CHICAGO AREA DODDERS

A	Inflorescence forming rope-like twists . . .	**Rope Dodder . . .**	**1423**
A	Inflorescence not forming rope-like twists . .	**B**	
B	Ovary and capsule pointed, enclosed or capped by dry corolla	**C**	
B	Ovary and capsule depressed, globose; corolla at base only of ripe capsule, or on summit .	**D**	
C	Corolla lobes acute, inflexed; on shrubs and coarse herbs	**Hazel Dodder . . .**	**1421**
C	Corolla lobes blunt, spreading, very coarse .	**Common Dodder . .**	**1422**
D	Flowers in dense clusters; corolla withering at capsule base	**E**	
D	Flowers in dense cymes that are panicled; corolla withering at capsule summit . . .	**Button Bush Dodder .**	**1420**
E	Stems coarse, orange; scales small, 2 cleft; on herbs	**Polygonum Dodder. .**	**1418**
E	Stems slender, pale; flower scales large, fringed	**Field Dodder . . .**	**1419**

1418. CUSCUTA OBTUSIFLORA H. B. K. C. polygonorum Engelm.

POLYGONUM DODDER.

On various herbs in moist lands. Calumet Lake and near Miller.

1419. CUSCUTA ARVENSIS Beyrich.

FIELD DODDER. LOVE VINE.

From Berry Lake to Miller and eastward. On various plants. (Hill)

1420. CUSCUTA CEPHALANTHI Engelm.

BUTTONBUSH DODDER.

Vicinity of Hegewisch, growing on Cephalanthus, Salix, Rhustox, and various large herbs. (Hill)

1421. CUSCUTA CORYLI Engelm.

HAZEL DODDER.

Vicinity of Hegewisch, associated with C. cephalanthus, growing on various shrubs, besides large herbs.

Winnetka, on hazel. (Johnson)

1422. CUSCUTA GRONOVII Willd.

COMMON DODDER. LOVE VINE.

Growing on all sorts of plants, in low grounds along the Des Plaines and Chicago rivers, common.

On the borders of Deep River in Indiana. Our common species.

Skokie Marsh, frequent. (Sherff.)

1423. CUSCUTA GLOMERATA Chois. C. paradoxa Raf.

ROPE DODDER.

Low ground on Solidago and Helianthus, common.

POLEMONIACEAE.

PHLOX.

Herbs, with opposite or alternate leaves; 5 parted, 5 stamened flowers; and 3 celled ovary, becoming a capsule.

200 species, most abundant in Western America, with 7 in our district.

1424. PHLOX GLABERRIMA L.

MARSH PHLOX. SMOOTH PHLOX.

Grassy marshes from Waukegan to Dune Park, common.

A beautiful plant, very fine in cultivation.

1425. PHLOX PILOSA L.

PRAIRIE PHLOX. SWEET WILLIAM PHLOX. RED PHLOX.

Dry prairies and open woodlands, common.

Very variable in color, sometimes white.

1426. PHLOX DIVARICATA L.

WOOD PHLOX. BLUE PHLOX.

Rich woodlands, common.

Very variable in color, from deep violet to white.

Succeeds better than the other species in the garden, growing rampant.

1427. PHLOX ARGILLACEA (Clute-Ferris)

FERRIS'S PHLOX.

Type localities. Oak Forest and Midlothian. (Britton & Brown, 2nd Ed.) Britton has it, "A relative or race of Phlox pilosa."

This is a late discovery by Mr. Clute.

1428. PHLOX BIFIDA Beck.

SAND PHLOX. CLEFT PHLOX.

Sand ridges from Waukegan to our eastern limits. Common locally.

A magnificent bluff at Mineral Springs is a solid color with it at blooming time. Generally very pale in tint.

1429. GILIA LINEARIS (Nutt.) Gray. Collomia Nutt.

COLLOMIA.

Along the B. & O. Ry. at Naperville, 1906, evidently a stray from the West. (Umbach)

Becoming a frequent railroad weed. Many colonies have been discovered within recent years.

1430. POLEMONIUM REPTANS L.

GREEK VALERIAN. BLUEBELL. JACOB'S LADDER.

Rich shaded banks, common along the Des Plaines River and in the woods north and northwest of Chicago.

Frequent in rich wooded swales southeast.

Varies much in size and profusion of flower. Easily grown in the flower garden.

HYDROPHYLLACEAE.

WATERLEAFS.

Herbs, mostly hairy; leaves alternate; flowers regular, 5-merous; ovary one celled; flowers in one sided cymes.

160 species, mostly west American with 4 in our district.

1431. HYDROPHYLLUM VIRGINIANUM L.

WATERLEAF. BROOK FLOWER.

Rich moist woods throughout, common.

Very fine in cultivation but very likely to spread with undesirable rapidity.

1432. HYDROPHYLLUM CANADENSE L.

BROAD LEAVED WATERLEAF.

Woods near Lemont, Ill., near the Des Plaines River. (Higley)
Woods of the Forest Preserve at Willow Springs

1433. HYDROPHYLLUM APPENDICULATUM Michx.

GREAT WATERLEAF.

Rich damp woods near the Des Plaines and Chicago rivers, occasional.
Common at Willow Springs and on the wooded slopes of the two Du Page rivers.

1434. ELLISIA NYCTELEA L. Nyctelea (L.) Brit.

ELLISIA.

Shaded damp places, common.

BORAGINACEAE.

BORAGEWORTS.

Rough hairy (usually) herbs; regular 5 parted flowers in a coiled inflorescence; ovary four lobed, four seeded.
1500 species of wide distribution, with 16 in our district.

1435. CYNOGLOSSUM OFFICINALE L.

HOUND'S TONGUE.

Roadsides and railways, occasional.
Old pastures seems a favorite habitat.

1436. CYNOGLOSSUM VIRGINIANUM L.

WILD COMFREY.

Open wooded ridge ½ mile west of Clarke Junction. Frequent.
"Open woods north, infrequent," Babcock reports.

1437. LAPPULA VIRGINIANA (L.) Greene.

BEGGAR'S LICE. STICK-SEED.

Woods, abundant. A most miserable forest weed, covering one's clothing with tight clinging burs.

1438. LAPPULA ECHINATA Gilbert. Lappula lappula (L.) Karst.

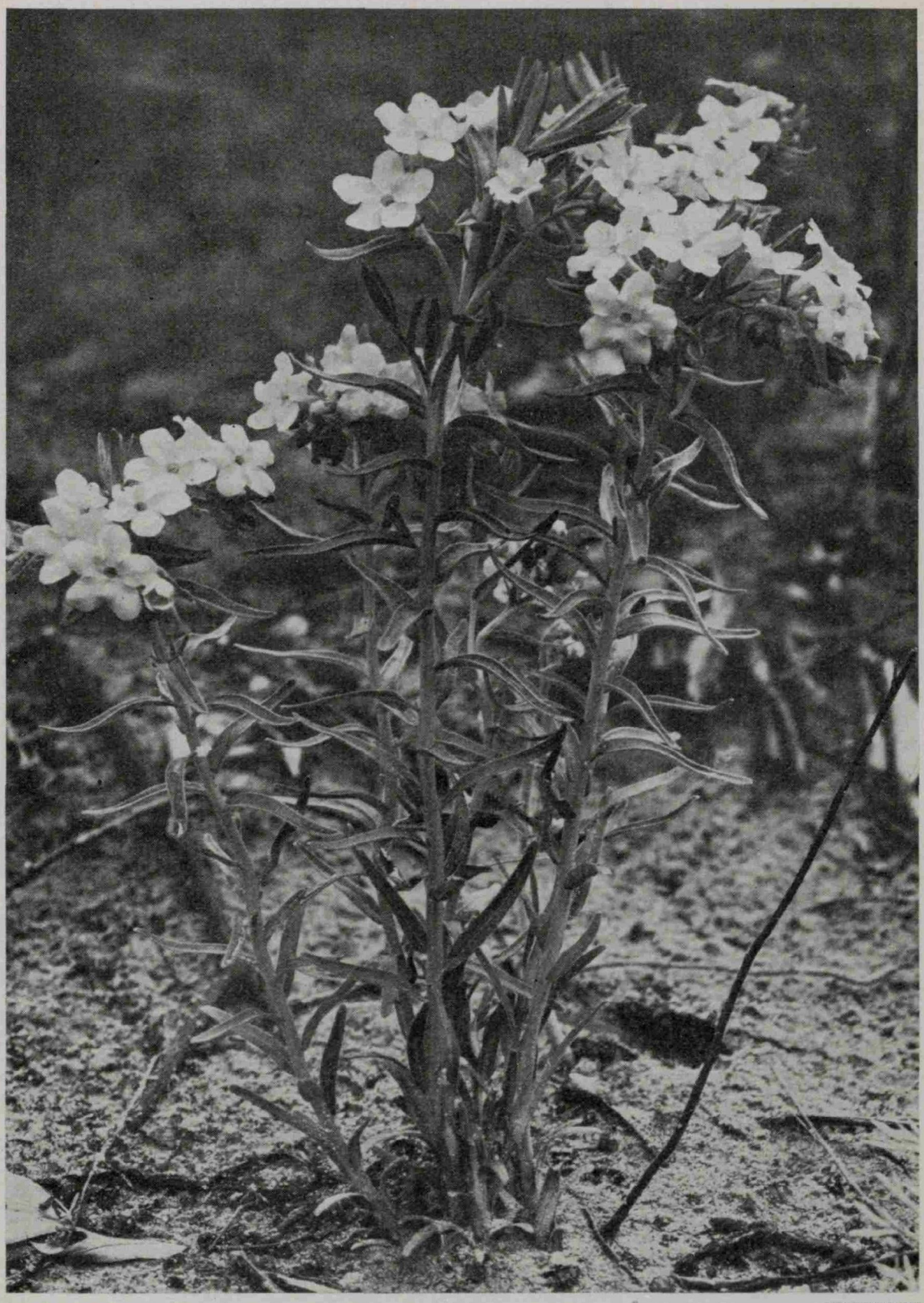
BEGGAR'S LICE.

Roads and railways, occasional.

1439. MYOSOTIS SCORPIOIDES L. M. palustris Hill.

FORGET-ME-NOT.

Shores of Grand Calumet River, Clarke, Ind., common. The habitat named will doubtless soon be destroyed by commercial operations.



WOODRUFF

A FINE ROUGH-STEMMED PUCCOON (*Lithospermum Gmelini*)

1440. MYOSOTIS LAXA Lehm.

SMALLER FORGET-ME-NOT.

Cold brook in tamarack swamp southeast of Miller, on margin of the Little Calumet River valley. Common locally at this station.

1441. MYOSOTIS ARVENSIS (L.) Hill.

FIELD SCORPION GRASS.

Dry fields Palos Park, frequent.
Very abundant as a weed in the south.

1442. MYOSOTIS VIRGINICA (L.) B. S. P. M. verna Nutt.

WHITE FORGET-ME-NOT.

Dry bluffs of North Shore, common. Occasionally south in barren soil. New Lenox in open hilly woods.

1443. MERTENSIA VIRGINICA (L.) Link.

VIRGINIA COWSLIP. BLUEBELLS. CHIMING BELLS. LUNG-WORT.

Woods of the rich bottom lands of the Chicago River, below Edgebrook. Des Plaines River valley, very fine and abundant at River Forest. Du Page River valley at Naperville.
A fine plant that ought to be more often cultivated.

1444. LITHOSPERMUM ARVENSE L.

CORN GROMWELL.

Waste places throughout, frequent. A common weed further east in Indiana and Michigan.

1445. LITHOSPERMUM LATIFOLIUM Michx.

BROAD LEAVED PUCCOON.

Open woods of the Des Plaines and Du Page river valleys. North branch of the Chicago River. Nowhere common.

1446. LITHOSPERMUM GMELINI (Michx.) Hitchc. L. carolinense (Walt.) MacM.

ROUGH PUCCOON. SHOWY PUCCOON.

Sand ridges near Lake Michigan throughout. Common and fine in Lake and Porter Cos., Ind. Abundant on sands north of Waukegan.
Apparently cannot be successfully cultivated.

1447. LITHOSPERMUM CANESCENS (Michx.) Lehm.

HOARY PUCCOON.

Dry open lands, prairies and open woodlands, common.
Blooming very early in April.

1448. LITHOSPERMUM ANGUSTIFOLIUM Michx. L. linearifolium Goldie.

PRAIRIE PUCCOON. NARROW LEAVED PUCCOON. PALE PUCCOON.

Dry sandy soil at the foot of Addison St., Chicago, for many years. Station now destroyed.

Common at Waukegan on the sand flats.

Frequent in isolated colonies throughout.

Glen Ellyn on the barrens near C. & N. W. Ry. (Moffatt)

75th and Vincennes Ave., in dry sandy soil.

Lisle, Warrenville, Naperville. (Umbach)

1449. ONOSMODIUM HISPIDISSIMUM Mack.

FALSE GROMWELL.

Near the Des Plaines River, infrequent. (Babcock)

1450. ECHIUM VULGARE L.

BLUE WEED. BLUE DEVIL. VIPER'S BUGLOSS.

Dry sandy or clay soil at Porter, on our eastern limit.

South end of Jackson Park, a colony discovered in 1901. (Goldberger)

Worth, Palos Park, Willow Springs. (Umbach)

Exceedingly abundant as one goes south.

VERBENACEAE.

VERBENAS. VERVAINS.

Mostly herbs; square stemmed; opposite leaved; irregular flowered. Ovary not lobed.

1200 species, largely tropical, with 10 in our district.

1451. VERBENA URTICAEFOLIA L.

WHITE VERVAIN.

Low grounds, common.

Hybrids with V. hastata are common.

1452. VERBENA ANGUSTIFOLIA Michx.

NARROW-LEAVED VERVAIN.

Dry soils chiefly north, rare locally. Rocky soil near Romeo, rare. (Umbach, Pepoon)

1453. VERBENA ANGUSTIFOLIA X STRICTA.

NARROW-LEAVED X STIFF VERVAIN HYBRID.

Dry hills in the vicinity of Lyons, 1898. (Hill) Intermediate in characters between the parent species.

1454. VERBENA HASTATA L.

BLUE VERVAIN.

Low grounds, very common.

1455. VERBENA HASTATA X URTICAEFOLIA.

BLUE X NETTLE-LEAVED VERVAIN HYBRID.

Frequent where the two species grow together.

1456. VERBENA STRICTA Vent.

HOARY VERVAIN. STIFF VERAIN

Dry sandy or clay soils; common locally throughout the area.
Occasionally white. Our most showy species.

1457. VERBENA STRICTA X HASTATA.

HOARY X BLUE VERVAIN HYBRID.

Leaves hastata in form, stricta in texture; flowers approaching stricta. Eggleston, 1898. "Where several species intermingle, hybrids are common." (Hill)

1458. VERBENA BRACTEOSA Michx.

CREEPING VERVAIN.

Roads and streets and particularly railroads. Common.

1459. VERBENA BIPINNATIFIDA Nutt.

WILD VERBENA.

Along the Wabash Ry. near Clarke Junction, a few near the tower house. Doubtless introduced from the west.

1460. LIPPIA LANCEOLATA Michx.

FOG FRUIT.

River bank of the Des Plaines, common.
Along Thorn Creek near Chicago Heights, occasional.
On the shores of the Little Calumet.

SPECIAL KEY TO THE MINTS

	Whole plant white woolly; leaves round ovate; flowers white in axillary clusters	**Horehound**	**1469**
	Plants not thus woolly	**A**	
A	Plants prostrate, creeping; leaves cordate rounded; flowers small, axillary, blue . .	**Ground Ivy**	**1473**
A	Plants decumbent with white, cordate, blotched leaves; flowers purple in axillary clusters .	**Dead Nettle** . . .	**1479**
A	Plants erect or nearly so	**B**	
B	Plants with linear leaves	**C**	
B	Plants with broader leaves	**E**	
C	Flowers in terminal, interrupted spikes, purple	**Hyssop Hedge Nettle** .	**1482**
C	Flowers white in terminal, dense cymes . .	**Flexuous Mountain Mint**	**1499**
C	Flowers axillary	**D**	
D	Flowers very small, blue, inflorescence forming a terminal, leafy raceme	**Rough Pennyroyal** .	**1496**
D	Flowers purple, stalked, few in each cluster .	**Calamint**	**1498**
E	Inflorescence mostly terminal, in spikes, racemes or panicled clusters	**F**	
E	Inflorescence axillary; flowers few or many. .	**Z**	
F	Flowers in panicles or panicled racemes . .	**G**	
F	Flowers not in panicles or panicled racemes .	**H**	
G	Flowers yellow; leaves large, ovate	**Collinsonia** . .	**1511**
G	Flowers blue and white; leaves cordate. . .	**Two Colored Skullcap** .	**1466**
H	Flowers in dense heads or cymes	**I**	
H	Flowers not thus. In spikes, simple, clustered or interrupted	**M**	
I	Flowers in cymes, white	**J**	
I	Flowers in heads, red or yellow	**K**	
J	Leaves narrowly lanceolate, nearly smooth .	**Virginia Mountain Mint**	**1500**
J	Leaves oblong-lance, soft and hairy. . . .	**Downy Mountain Mint**	**1501**
K	Flowers yellowish, also in upper leaf axils; plant hoary	**Sand Horsemint** . .	**1491**
K	Flowers rose red or purple	**L**	
L	Leaves thin, villous	**Horsemint**	**1489**
L	Leaves firm, canescent	**Pale Leaved Horsemint**	**1490**
M	Flowers greenish-yellow; leaves large, ovate; stem sharply square	**Green Giant Hyssop** .	**1470**
M	Flowers purplish, rose, pink or blue. . . .	**N**	
N	Plants strongly aromatic	**O**	
N	Plants with but little odor	**Q**	
O	Leaves round, cordate, veiny, soft-downy, sessile	**Round Leaved Mint** .	**1506**
O	Leaves not thus	**P**	
P	Spikes slender, often clustered; leaves oblong .	**Spearmint**	**1507**
P	Spikes of interrupted flower clusters; leaves pale, cordate ovate, toothed	**Catmint**	**1472**
Q	Spikes dense, short or long, thick	**R**	
Q	Spikes loosely flowered or slender	**S**	

R	Plant low, leaves small, oblong	Prunella	1474–1475
R	Plant large, leaves large	Purple Giant Hyssop	1471
S	Flowers blue; leaves lanceolate, slightly toothed	Lance Leaved Sage	1487
S	Not as above	T	
T	Corolla very irregular, seemingly one lipped	U	
T	Corolla strongly two lipped	V	
U	Plant hoary with soft pubescence	Wood Sage	1461
U	Plant pale with white, villous hairs	Western Wood Sage	1463
V	Flowers large, 1″ or more long, spikes loosely flowered	W	
V	Flowers medium, less than 1″ long, spikes densely interrupted flowering	X	
W	Leaves sharply serrate	Dragon Head	1476–1477
X	Stems with bristly angles	Y	
X	Stems with smooth angles and leaves	Smooth Hedge Nettle	1483
Y	Leaves cordate, oblong-ovate, long, slender, petioled, hairy	Cordate Hedge Nettle	1486
Y	Leaves cordate, oblong-ovate, short, petioled, rough, hairy	Rough Hedge Nettle	1484
Y	Leaves cordate, oblong, sessile, hairy	Hedge Nettle	1485
Z	Flowers blue	a	
Z	Flowers white, very small, in dense clusters	d	
Z	Flowers purple	g	
a	Plant clammy pubescent; leaves lanceolate, entire	False Pennyroyal	1464
a	Plant otherwise	b	
b	Calyx with protuberance on one side	c	
b	Calyx not thus; plant small, branched; leaves oblong, strongly odorous	Pennyroyal	1495
c	Flowers solitary; leaves oblong, serrate, sessile; flowers large	Hooded Skullcap	1467
c	Flowers solitary; leaves ovate-cordate, sessile; flowers small	Small Skullcap	1468
c	Flowers racemed, very small; leaves oblong, toothed, petioled	Mad-Dog Skullcap	1465
d	Leaves deeply sinuate	American Water Horehound	1505
d	Leaves merely toothed	e	
e	Calyx teeth ovate	f	
e	Calyx teeth long pointed; leaves petioled, cuneate, toothed	Stalked Water Horehound	1504
f	Base of stem tuberous thickened, producing runners	Northern Bugleweed	1503
f	Base of stem not tuberous thickened	Virginia Bugleweed	1502
g	Calyx spiny; leaves palmately lobed and veined	Motherworts	1480–1481
g	Calyx not spiny	h	
h	Plants strongly fragrant	i	
h	Plants not strongly fragrant	j	
i	Smooth, pungent, flowers also collected into spikes	Peppermint	1508
i	Pubescent	Canadian Mint	1510
j	Leaves sessile, somewhat downy, ciliate	Ciliate Blephilia	1493
j	Leaves petioled, long, hairy; corolla pale, spotted	Hairy Blephilia	1494

LABIATAE.

THE MINTS.

Chiefly herbs, square stemmed; opposite leaved; irregular flowered. Flowers usually 2-lipped. Plants generally aromatic.

3200 species of wide distribution with 51 in our district.

1461. TEUCRIUM CANADENSE L.

WOOD SAGE.

Low rich grounds, common throughout, particularly in the prairie portion of our area.

1462. TEUCRIUM CANADENSE LITTORALE (Bick.) Fernald. T. littorale Bick.

WOOD SAGE. NARROW LEAVED GERMANDER.

Naperville, 1912. (Umbach) In similar situations.

1463. TEUCRIUM OCCIDENTALE Gray.

HAIRY WOOD SAGE.

Railway embankments near Lyons. Along the Des Plaines River below the above station. (Hill)

1464. ISANTHUS BRACHIATUS (L.) B. S. P.

FALSE PENNYROYAL. FLUX WEED.

Dry sterile soils, Lake and Porter Cos., Ind.

Common at Romeo and Lemont. (Umbach)

1465. SCUTELLARIA LATERIFLORA L.

MAD-DOG SKULLCAP. MAD-WEED.

Wet marshy woods. Common southeast, less common north and west.

Rather common along Dead River near Waukegan.

1466. SCUTELLARIA VERSICOLOR Nutt. S. cordifolia Muhl.

HEART-LEAVED SKULLCAP. TWO-COLORED SKULLCAP.

Rich wooded slopes, Wheatland and Warrenville, near the Du Page River. (Umbach)

1467. SCUTELLARIA GALERICULATA L.

MARSH SKULLCAP. HOODED SKULLCAP.

Swamps, frequent throughout the area. Easily cultivated and freely reproducing when so treated.

1468. SCUTELLARIA PARVULA Michx.

SMALL SKULLCAP.

Sandy soils throughout, common. Very variable.

1469. MARRUBIUM VULGARE L.

HOREHOUND.

Streets of Lockport and on rock ledges northwest of that town. (Hill)
Tremont and east, occasional.

1470. AGASTACHE NEPETOIDES (L.) Kuntze.

CATNIP-LIKE GIANT HYSSOP. GREEN GIANT HYSSOP.

Open woods throughout, frequent.

1471. AGASTACHE SCROPHULARIAEFOLIA Willd.

PURPLISH GIANT HYSSOP.

Wood borders, frequent north and west. Less abundant than the former but a more striking plant.

1472. NEPETA CATARIA L.

CATNIP. CATMINT.

Common in all waste places.

1473. NEPETA HEDERACEA (L.) Trev. Glecoma hederacea L.

GROUND IVY. CREEPING CHARLEY. GILL-OVER-THE-GROUND.

Shaded places near dwellings, abundant.
A bad weed if permitted to grow unmolested as it will run out lawn grass.

1474. PRUNELLA VULGARIS L.

SELF-HEAL. HEAL-ALL.

Dry soils everywhere.

1475. PRUNELLA VULGARIS NANA Clute.

LAWN PRUNELLA.

A very dwarf form of lawns and grassy places, forming dense low-growing mats that quickly kill the grass. Irving Park.

1476. PHYSOSTEGIA VIRGINIANA (L.) Benth. Dracocephalum virginianum L.

DRAGON HEAD. OBEDIENT PLANT. LION'S HEART.

Low grounds, frequent. Particularly abundant in the marshes, west and south. Common on the Waukegan moorland.

1477. PHYSOSTEGIA DENTICULATA (Ait.) Brit. Dracocephalum.

TOOTHED DRAGON HEAD.

Wet prairies and prairie marshes west, an occasional occurrence.

1478. LAMIUM AMPLEXICAULE L.

DEAD NETTLE. HENBIT.

Waste grounds, Ravenswood.
Streets of Naperville, occasional. (Umbach)
Both this and the next probably occur scatteringly but are not reported.

1479. LAMIUM MACULATUM L.

SPOTTED DEAD NETTLE.

Neighborhood of Graceland Cemetery, rare.
Streets of Naperville. (Umbach)

1480. LEONURUS CARDIACA L.

MOTHERWORT.

Waste places, common locally in rich, shaded fence-rows near dwellings.

1481. LEONURUS MARRUBIASTRUM L.

MOTHERWORT.

Roadsides. A few plants at Mokena. (Hill)
Far removed from reported localities of the East.

1482. STACHYS HYSSOPIFOLIA Michx.

HYSSOP HEDGE NETTLE.

Sandy wet lands, abundant from Dune Park eastward.

1483. STACHYS TENUIFOLIA Willd.

SMOOTH HEDGE NETTLE.

Moist soils along the Des Plaines River and slough borders southeast, rare.

1484. STACHYS TENUIFOLIA ASPERA (Michx.) Fernald. Stachys aspera Michx.

ROUGH HEDGE NETTLE.

Banks and wet places, not common but generally distributed.

1485. STACHYS PALUSTRIS L.

WOUND-WORT. HEDGE NETTLE.

Low grounds, common and generally distributed.

1486. STACHYS CORDATA Riddell.

LIGHT-GREEN HEDGE NETTLE.

Romeo, 1907, in moist soil, rare. (Umbach)

1487. SALVIA LANCEAEFOLIA Poir.

WILD SAGE. LANCE-LEAVED SAGE.

Along the railways entering Chicago from the west, occasional. An introduction by freight cars from western roads.

This species may be expected along all railways that have a southwestern haulage.

Our plants are certainly introduced, although Gray gives Indiana as a station.

1488. MONARDA DIDYMA L.

BEE BALM. OSWEGO TEA.

Reported by Brennan and Babcock from the sand country between South Chicago and Pine as rare. Also a locality at Riverside. Later botanists do not report it and there is doubt as to its occurrence.

A showy garden plant that ordinarily "runs out" with us.

1489. MONARDA FISTULOSA L.

WILD BERGAMOT. HORSEMINT.

Dry soils, very abundant and variable. Like the preceding does not easily become reconciled to garden life, at least in our area.

1490. MONARDA MOLLIS L.

PALE WILD BERGAMOT.

Woods, Clarke and Aetna, Ind., 1906. (Umbach)

1491. MONARDA PUNCTATA L.

SAND HORSEMINT. SAND BERGAMOT.

Sandy soils near Lake Michigan, common both north and southeast.

1492. MONARDA CITRIODORA Cerv. M. pectinata Nutt.

LEMON MINT.

Dump of Alton Ry. at Brighton Park, 1896. (Umbach)



PEPOON

COMMON HORSEMINT (*Monarda fistulosa*)

A CHARACTERISTIC COLONY GROWING NEAR A SWAMP MARGIN

1493. BLEPHILIA CILIATA (L.) Raf.

DOWNY BLEPHILIA.

Limestone ridge near Lockport. (Hill)
West Chicago in open dry places, not rare. (Moffatt, Pepoon, Umbach)

1494. BLEPHILIA HIRSUTA (Pursh) Benth.

WOOD MINT. HAIRY BLEPHILIA. PALE MINT.

Woods at Otis, Ind., at eastern limits. (Hill) Common in damp woods in southwestern Michigan.
Naperville, Romeo, Palatine. Rich damp Niles woods.

1495. HEDEOMA PULEGIOIDES (L.) Pers.

AMERICAN PENNYROYAL.

Dry soils in Lake and Porter Cos., Ind. Also on the dry bluffs north near Lake Michigan.
Abundant on the sandy ridges north of Waukegan.

1496. HEDEOMA HISPIDA Pursh.

ROUGH PENNYROYAL.

Dry sandy soil or clay in open ground. Rather frequent along the north shore. Also occasional along the railways entering Chicago.
Frequent on dry ridges of the Dune region.

1497. SATUREJA HORTENSIS L.

SUMMER SAVORY.

Spreading in a field near Naperville. Seen in '97, '98, 1900. (Umbach)

1498. SATUREJA GLABRA (Nutt.) Fernald. Clinopodium glabrum (Nutt.) Kuntze.

LOW CALAMINT.

Sandy soil, Rogers Park. (Dunham)
Frequent southeast. Miller, Dune Park and eastward.

1499. PYCANTHEMUM FLEXUOSUM (Walt.) B. S. P. Koellia flexuosa (Walt.) MacM.

NARROW LEAVED MOUNTAIN MINT.

Dry open woods, fields and fence-rows, frequent.

1500. PYCANTHEMUM VIRGINIANUM (L.) D. & J. Koellia virginiana (L.) MacM.

BASIL. MOUNTAIN MINT. PENNYROYAL.

Marshes and moist open lands. Common on the prairies west and northwest.

1501. PYCANTHEMUM PILOSUM Nutt. Koellia pilosa (Nutt.) Brit.

HAIRY MOUNTAIN MINT. DOWNY MOUNTAIN MINT.

Dry banks near Palatine, rare. Riverside. (Babcock)

1502. LYCOPUS VIRGINICUS L.

BUGLE WEED.

Low rich soils. Common eastward particularly in damp woodlands.

1503. LYCOPUS UNIFLORUS Michx. L. communis Bick.

NORTHERN BUGLE WEED.

Dune Park and Mt. Tom. (Umbach)

1504. LYCOPUS RUBELLUS Moench.

WATER HOREHOUND. STALKED WATER HOREHOUND.

Wet sandy soils, southeast, common.

1505. LYCOPUS AMERICANUS Muhl.

AMERICAN WATER HOREHOUND.

Low grounds, very common throughout.

1506. MENTHA ROTUNDIFOLIA (L.) Huds.

ROUND LEAVED MINT.

A large patch at Clarke, Ind., near the Penn. Ry. station, well established and persistent.

1507. MENTHA SPICATA L.

SPEARMINT. LAMB MINT. MINT.

Dune Park and eastward, occasional, becoming very abundant in southwestern Michigan, often taking possession of roadsides.

1508. MENTHA PIPERITA L.

PEPPERMINT.

Moist banks along the Des Plaines River, rare. Occasional eastward toward Michigan where it is largely grown for its oil.

1509. MENTHA ARVENSIS L.

CORN MINT. FIELD MINT.

Frequent in damp soils. Seems to be the commoner form rather than the var. canadensis (L.) Briquet.

This plant in Britton & Brown is not stated as found in our area, but Gray so gives the distribution.

1510. MENTHA ARVENSIS CANADENSIS (L.) Briquet. M. canadensis L.

CANADA MINT. WILD MINT.

With the species, frequent. The species and var. are certainly confused.

1511. COLLINSONIA CANADENSIS L.

STONE-ROOT. HORSE BALM.

Rich woods, Niles, Palatine, Maywood, rare. (Babcock)

No one else reports this conspicuous plant from these stations. It is found in the beech woods of our eastern limits and eastward.

KEY TO THE PLANTS OF THE NIGHTSHADE FAMILY HAVING BERRY LIKE FRUITS

A	Plants prickly	B	
A	Plants not prickly	D	
B	Plants silvery	White Horse Nettle	1516
B	Plants not silvery	C	
C	Very prickly; flowers violet	Horse Nettle	1515
C	Very prickly; flowers yellow	Buffalo Bur	1517
D	Climbing or trailing; flowers purple; fruit scarlet	Red Nightshade	1512
D	Plants not thus	E	
E	Flowers white	F	
E	Flowers yellow or greenish-yellow	G	
E	Flowers pale blue	Apple of Peru	1529
F	Leaves pinnatifid, berry green	Three-Flowered Nightshade	1513
F	Leaves wavy-toothed, berry black	Black Nightshade	1514
G	Leaves pinnatifid, strong-odored	Tomato	1518
G	Leaves, at most, toothed; not odorous	H	
	There are ten ground cherries in our region but they are not easy to separate from each other.		
H	Plants with shallow annual roots	I	
H	Plants with deep perennial roots	L	
I	Plants smooth	J	
I	Plants hairy	K	
J	Leaf teeth sharp-pointed	Cut-LeavedGroundCherry	1520
J	Leaf teeth blunt	Barbadoes Cherry	1522
K	Plant hoary	Strawberry Tomato	1521
K	Plant green	Hairy Ground Cherry	1519
L	Hairs once or twice-branched	Low Ground Cherry	1523
L	Hairs simple or none	M	
M	Fruiting calyx scarlet	Winter Cherry	1524
M	Fruiting calyx greenish	N	
N	Leaves broad-ovate, sticky-hairy, cordate	Clammy Ground Cherry	1525
N	Leaves narrow-ovate, not sticky-hairy, not cordate	O	
O	Nearly smooth; leaves narrow-long	Long-Leaved Ground Cherry	1526
O	Rough-hairy or villous	P	
P	Villous	Lance-Leaved Ground Cherry	1528
P	Rough and stiff haired	Tall Ground Cherry	1527

SOLANACEAE.

THE NIGHTSHADES.

Mostly herbs, alternate leaved. Regular 5-parted, 5-stamened flowers. The fruit a 2-celled (rarely 3–5) berry or capsule.

Rank scented, often poisonous.

1750 species, mostly tropical, with 22 in our district.

1512. SOLANUM DULCAMARA L.

BITTERSWEET. RED NIGHTSHADE.

Streets, vacant lots and particularly wooded swamps southeast in Lake and Porter Cos., Ind., frequent.

This plant is rapidly extending its territory in all the cities of our district, becoming a weed.

1513. SOLANUM TRIFLORUM Nutt.

3-FLOWERED NIGHTSHADE.

Railroad yards about Chicago, particularly those of southwestern roads, rare. C. & A. Ry. near Brighton. (Moffatt)

1514. SOLANUM NIGRUM L.

BLACK NIGHTSHADE. GARDEN NIGHTSHADE.

Waste places, common. Often confused with the "New Sunberry" of Burbank and apparently sold for such in many instances. Pies are made of the black berry-like fruits although it is reputed to be poisonous.

1515. SOLANUM CAROLINENSE L.

HORSE NETTLE. SAND BRIER. APPLE OF SODOM.

Fields and roadsides, frequent. A very serious weed when well established, particularly in sandy fields. A common railroad plant.

1516. SOLANUM ELAEAGNIFOLIUM Cav.

WHITE HORSE NETTLE.

Railroad yards of Alton, Sante Fe, and Burlington.

Occasional southwest of Chicago. A railroad introduction from the southwest.

1517. SOLANUM ROSTRATUM Dunal.

BUFFALO BUR. SAND BUR.

Railroads, freight yards and occasional in vacant lots if sandy.

Appearing as a weed, Irving Park, 1915.

1518. LYCOPERSICON ESCULENTUM Mill. L. lycopersicon (L.) Karst.

TOMATO.

Frequent in vacant lots, along railways and in outlying city streets.

1519. PHYSALIS PUBESCENS L.

HAIRY GROUND CHERRY.

Sandy soils near Summit, rare.

1520. PHYSALIS ANGULATA L.

CUT-LEAVED GROUND CHERRY.

Along railroads, Clarke and Miller, Ind. Brighton Park. (Umbach)

1521. PHYSALIS PRUINOSA L.

STRAWBERRY TOMATO. TALL GROUND CHERRY.

Sandy dry soils, frequent.

1522. PHYSALIS BARBADENSIS Jacq.

BARBADOES GROUND CHERRY.

Along the Alton Ry. at Brighton Park, '96 and '98. (Umbach)

1523. PHYSALIS PUMILA Nutt.

LOW GROUND CHERRY.

Dry sandy banks along the Santa Fe Ry. near Summit. Introduced from the West.

1524. PHYSALIS ALKA-KENGI L.

WINTER CHERRY. STRAWBERRY TOMATO.

Persisting in gardens in Naperville; also in a few fields. (Umbach)
Used for pies and preserves.

1525. PHYSALIS HETEROPHYLLA Nees.

CLAMMY GROUND CHERRY.

Fields and roadsides, common. Our most abundant species, to be found throughout our district.

1526. PHYSALIS LONGIFOLIA Nutt.

LONG-LEAVED GROUND CHERRY.

Along the Chicago Junction Ry. north of Summit, rare.

1527. PHYSALIS SUBGLABRATA MacK. & B.

TALL GROUND CHERRY.

Rich cultivated soils, frequent. Rather common on low-lying cultivated fields where it persists year after year.

1528. PHYSALIS VIRGINIANA Mill.

LANCE-LEAVED GROUND CHERRY.

Dry soils, abundant southeast. About as common as P. heterophylla.

NOTE:—The genus Physalis is very difficult and the Chicago Area species need careful study to determine the exact number and forms that may be found.

1529. NICANDRA PHYSALODES (L.) Pers. Physalodes physalodes (L.) Brit.

APPLE OF PERU.

Waste railroad dump of Chicago and Alton Ry. at Sag, rare. (Umbach)

1530. LYCIUM HALIMIFOLIUM Mill.

MATRIMONY VINE.

Well established in waste grounds of Lombard, Du Page Co. (Moffatt)

1531. DATURA STRAMONIUM L.

JIMSON WEED. THORN APPLE.

Rich soil about barns, houses and in vacant lots, occasional.

1532. DATURA TATULA L. Datura stramonium L. of Britton & Brown

PURPLE JIMSON WEED.

In similar places, more common.

1533. PETUNIA VIOLACEA L.

PETUNIA.

Strongly persistent at Dune Park on site of old camp. (Hill)
Ravenswood, in vacant lots.

e	Plant hairy all over; leaves ovate, toothed, stalked	**Speedwell**	**1557**
e	Plant smooth or nearly so	f	
f	Leaves linear-lance; fruit very flat	**Marsh Speedwell**	**1555**
f	Leaves ovate-oblong or oblong-lance	g	
g	Leaves sessile, clasping	**Water Speedwell**	**1553**
g	Leaves stalked	**Brooklime**	**1554**

SCROPHULARIACEAE.

THE FIGWORTS.

Chiefly herbs with paired stamens, usually irregular, often labiate flowers. Fruit a 2-celled, many-seeded capsule.

2700 species, with 46 in our district.

1534. VERBASCUM THAPSUS L.

MULLEIN. VELVET LEAF.

Dry open lands, common. An abundant and conspicuous weed of hillside pastures.

Cultivated in Europe under various varieties.

1535. VERBASCUM BLATTARIA L.

MOTH MULLEIN.

Open waste places along the Des Plaines River, becoming gradually more common. Two color forms, the white and yellow, the latter typical but rare with us.

1536. LINARIA CANADENSIS (L.) Dumont.

BLUE TOADFLAX.

Sandy soils north and southeast, common.

1537. LINARIA VULGARIS Hill. Linaria linaria (L.) Karst.

BUTTER AND EGGS. TOADFLAX. WILD SNAPDRAGON. RABBIT-FLOWER.

Roadsides, streets and railways, common.

Showy but universally ignored because it is a weed.

1538. LINARIA MINOR (L.) Desf. Chaenorrhinum minus (L.) Lang.

SMALL SNAPDRAGON.

Ballast of railways at Romeo, 1912. (Umbach)

1539. COLLINSIA VERNA Nutt.

BLUE-EYED MARY. INNOCENCE.

Rich wooded slopes east side of the Des Plaines River. River Forest. Turner Park. Very abundant locally, occasionally violet and white.

Naperville, Wheatland, Downers Grove. (Umbach)

1540. SCROPHULARIA LEPORELLA Bick.

FIGWORT.

With S. marilandica and confused with it. Probably the more common species with us.

1541. SCROPHULARIA MARILANDICA L.

FIGWORT.

Open rich woods and vacant places, frequent.

A noted nectar plant for bees.



PEPOON

INDIAN PIPE IN FLOWER AND FRUIT
(*Monotropa uniflora*)

1542. PENTSTEMON HIRSUTUS (L.) Willd.

HAIRY BEARD-TONGUE.

Dry hilly ground, infrequent. The Sag. Des Plaines River.
Gravelly fields near Romeo, scarce.
Common in Lemont on rocky ground.

1543. PENTSTEMON ALBIDUS Nutt.

WHITE BEARD-TONGUE.

Plentiful along railroads near Joliet. (Clute)
This station is somewhat beyond our limits, but the plants may be found nearer Chicago.

1544. PENTSTEMON LAEVIGATUS Ait. P. pentstemon (L.) Brit.

SMOOTH BEARD-TONGUE.

Moist open land, particularly in grassy places. Abundant north locally at Wilmette, Glencoe and particularly in wet meadows north of Waukegan.
Common along the railways southwest of Chicago.

1545. CHELONE GLABRA L.

TURTLEHEAD. SNAKEHEAD.

Low grounds, common throughout the area.
Very abundant in the marsh lands north of Waukegan.

1546. MIMULUS RINGENS L.

SQUARE-STEMMED MONKEY FLOWER.

Wet places, frequent throughout.

1547. MIMULUS ALATUS Ait.

WING-STEMMED MONKEY FLOWER.

Wet places, frequent but not so abundant as the last species.

1548. MIMULUS GLABRATUS JAMESII (T. & G.) Gray. M. Geyeri Torr.

YELLOW MONKEY FLOWER.

Miller, Ind. One locality. (Higley, Babcock)

Not reported by any late collectors. May be overlooked or the station destroyed.

1549. ILYSANTHES DUBIA (L.) Barn.

FALSE PIMPERNEL.

Muddy shores of the Des Plaines River, frequent. On the Calumet River in Indiana, and on the north branch of the Chicago River.

Borders of prairie ponds throughout.

1550. GRATIOLA VIRGINIANA L.

CLAMMY HEDGE HYSSOP.

Muddy shores of the Des Plaines River, occasional.

Wet prairies and banks, frequent or common. (Higley & Raddin)



W. HERZBERG

TURTLEHEAD (*Chelone glabra*)



PEPOON



PEPOON

TWO WILDLINGS AT HOME IN THE GARDEN

WILD GERANIUM; SMOOTH BEARD-TONGUE

(Geranium maculatum) *(Pentstemon laevigatus)*

1551. GRATIOLA SPHAEROCARPA Ell.

ROUND FRUITED HEDGE HYSSOP. YELLOW GRATIOLA.

Muddy pond borders southeast of Willow Springs, not common, and leading a precarious existence on account of cattle. (Hill)

Sand pit at Clarke, Ind., 1898. (Umbach) Evanston. (Boltwood)

1552. VERONICA VIRGINICA L. Leptandra (L.) Nutt.

CULVER'S PHYSIC.

Rich open lands throughout, occasional.

Often growing in open woodlands.

Very common in the Dune country.

1553. VERONICA ANAGALLIS-AQUATICA L.

WATER SPEEDWELL.

Cold brooks, north shore, occasional.

Along the banks of the Des Plaines and Du Page rivers. (Umbach)

Ditches and wet prairies southward, frequent. (Higley & Raddin)

1554. VERONICA AMERICANA Schwein.

SPEEDWELL. AMERICAN BROOKLIME.

Brooks and ditches. Occasional throughout the region.

1555. VERONICA SCUTELLATA L.

MARSH SPEEDWELL.

Marshes southeast, common. Miller, Dune Park.

Niles woods, rare. Lake Calumet. Riverside.

1556. VERONICA SERPYLLIFOLIA L.

THYME-LEAVED SPEEDWELL.

Damp grassy places, common everywhere. Very easily overlooked from its small size.

1557. VERONICA PERIGRINA L.

PURSLANE SPEEDWELL. WANDERING VERONICA.

Cultivated places, common as an insignificant weed.

1558. VERONICA AGRESTIS L.

FIELD VERONICA. FIELD SPEEDWELL.

Streets of Naperville, rare. (Umbach)

1559. VERONICA ARVENSIS L.

CORN SPEEDWELL.

Cultivated fields, frequent.

A very insignificant plant with tiny flowers, most easily overlooked, as is the case with the last species.



WOODRUFF

LILIES, CULVER'S PHYSIC, MEADOW PARSNIP
(*Lilium superbum, Zizia aurea, Veronica Virginica*)

1560. SEYMERIA MACROPHYLLA Nutt. Afzelia (Nutt.) Kuntze.

MULLEIN FOXGLOVE.

Low woods along the Des Plaines below Riverside. (Hill)
Warrenville and Wheatland, rare. (Umbach)

1561. GERARDIA PEDICULARIA L. Dasystoma (L.) Benth.

FALSE FOXGLOVE. CLAMMY FALSE FOXGLOVE.

Sandy open places near Clarke and Miller, Ind., common. Dune Park and eastward, abundant locally. Edgebrook.

1562. GERARDIA PEDICULARIA AMBIGENS Fernald.

FOXGLOVE.

Clarke, Ind., 1909. (Umbach)

1563. GERARDIA GRANDIFLORA Benth. Dasystoma (Benth.) Wood.

GREAT-FLOWERED FALSE FOXGLOVE.

Dry open woods, occasional throughout. Rogers Park. (Chase, Hill) More common north. Evanston Township. (Chase)

1564. GERARDIA FLAVA L. Dasystoma. (L.) Wood.

DOWNY FALSE FOXGLOVE.

Dry open grounds in woods, occasional. Riverside. Lemont. Normal Park.

1565. GERARDIA VIRGINICA (L.) B. S. P. Dasystoma (L.) Brit.

SMOOTH FALSE FOXGLOVE.

Similar situations, the common species in our area.

1566. GERARDIA LAEVIGATA Raf. Dasystoma Raf.

ENTIRE-LEAVED FALSE FOXGLOVE. SMOOTH FALSE FOXGLOVE

Dune Park. (Umbach) 1906. South Chicago. (Babcock)

1567. GERARDIA AURICULATA Michx. Otophylla (Michx.) Small.

AURICLED GERARDIA. EARED PURPLE FOXGLOVE.

South Chicago and southward, infrequent or rare.
Washington Heights. (Bebb) Dunning. (Gates)

1568. GERARDIA ASPERA Dougl. Agalinus (Dougl.) Brit.

ROUGH PURPLE GERARDIA.

Abundant on moist prairie at LeMoyne near Santa Fe Ry. Southwest of Chicago. (Hill)

1569. GERARDIA PURPUREA L. Agalinus (L.) Brit.

PURPLE GERARDIA. PURPLE FOXGLOVE.

Very common in low sandy swales southeast. Also north, near Waukegan. Blooming late in the Fall.

1570. GERARDIA PAUPERCULA (Gray) Brit. Agalinus (Gray) Brit.

SMALL-FLOWERED GERARDIA. POOR PURPLE FOXGLOVE.

With the preceding, mostly southeast.
Pine, Tolleston. Palos Park. Wheatland. (Umbach)

1571. GERARDIA TENUIFOLIA Vahl. Agalinus (Vahl.) Raf.

SLENDER-LEAVED GERARDIA.

Low grounds, common throughout. By far our most common species.

1572. GERARDIA TENUIFOLIA MACROPHYLLA Benth. Agalinus Besseyana Brit.

BESSEY'S GERARDIA.

In wet soils. Dune Park, Ind. (Chase, Hill)

1573. GERARDIA SKINNERIANA Wood. Agalinus (Wood) Brit.

SKINNER'S GERARDIA.

Dry soils, frequent south. Rare along the north shore. (Higley, Babcock)

1574. BUCHNERA AMERICANA L.

BLUE HEARTS.

Pine and vicinity, not common. (Moffatt) A very local plant, extending to Miller but not reported farther east. Clarke. Gary.

This plant has a very localized distribution in our area. A few have been found north of Waukegan.

1575. CASTILLEJA COCCINEA (L.) Spreng.

PAINTED CUP. PAINT BRUSH.

Prairies and open sandy soils near Lake Michigan. Very abundant. South of Tolleston, on the gravelly flats of the Little Calumet, a very common form is pure yellow and locally is the exclusive color. On the prairies west of Chicago the two colors are mingled, the red predominating.

Cannot be transplanted, probably, therefore, root parasitic.

1576. CASTILLEJA SESSILIFLORA Pursh.

DOWNY YELLOW PAINTED CUP.

Sandy flats north of Waukegan, very common. Warrenville, DuPage Co. (Umbach)

1577. MELAMPYRUM LINEARE Lam.

COW WHEAT.

Open woods in Lake and Porter Cos., Ind., common.

1578. PEDICULARIS CANADENSIS L.

WOOD BETONY. LOUSEWORT.

Dry open knolls and slopes, common. A purple form is common southeast on the dry sand slopes. The prairie form is apparently yellow.

1579. PEDICULARIS LANCEOLATA Michx.

SWAMP BETONY.

Marshes, common throughout.

KEY TO THE CHICAGO AREA BLADDERWORTS

	Flowers yellow	A	
	Flowers purple	F	
A	Stems floating, commonly not rooting; leaves dissected; bladder bearing	B	
A	Stems rooting in mud, erect, naked; leaves small awl or grass-like	Horner Bladderwort	1586
B	Leaves numerous along the immersed stem .	C	
B	Leaves on branches at base of flower scape root-like, capillary	E	
C	Bladders borne on separate leafless branches; leaves 2 ranked, crowded	Intermediate Bladderwort	1583
C	Bladders borne on leaves	D	
D	Stems long, coarse; leaves crowded, much divided; flowers large, 5–12	Great Bladderwort . .	1580
D	Stems slender, thread-like; leaves scattered, 2–4 times forked	Small Bladderwort . .	1581
E	Bladders few; flowers 1 or 2, ⅓″ wide; spur short, conical	Short Spurred Bladderwort	1582
E	Bladders many; flowers 1 to 3, ½″ wide; spur oblong	Two Flowered Bladderwort*	
F	Stems free, floating, long; leaves whorled, much divided; bladders many	Great Purple Bladderwort	1584
F	Stems erect, rooting in mud; leaves awl-form with few lobes; flower solitary	Small Purple Bladderwort	1585

*Inserted in the Key but not as yet found in the Area.

LENTIBULARIACEAE.

THE BLADDERWORTS.

Aquatics with small or dissected leaves, often bladder bearing, and small 2-lipped, 2-stamened flowers.

300 species, widely distributed, with 7 in our district.

1580. UTRICULARIA VULGARIS L. U. macrorhiza LeConte.

GREAT BLADDERWORT.

Stagnant or sluggish waters, common throughout.

Very abundant in the prairie ponds associated with the yellow water crowfoot.

1581. UTRICULARIA MINOR L.

LESSER BLADDERWORT. SMALL BLADDERWORT.

Shallow water, with the last. Rare.

1582. UTRICULARIA GIBBA L.

HUMPED BLADDERWORT. SHORT-SPURRED BLADDERWORT.

Shallow water, Lake Calumet. Miller. (Babcock) Pine, Ind., not frequent. (Hill, Brennan)

1583. UTRICULARIA INTERMEDIA Hayne.

FLAT-LEAVED BLADDERWORT.

Shallow water ponds at Pine, Ind. (Hill, Umbach)

In railroad ditch north of Waukegan. (Hill)

1584. UTRICULARIA PURPUREA Greene (Walt.) Vesiculina purpurea (Walt.) Raf.

PURPLE BLADDERWORT.

Mud flats and pond and slough margins. Pine, Ind., and east. Rare.

Rather common in the Dunes Highway bordering ditch at Long Lake.

1585. UTRICULARIA RESUPINATA Greene. Lecticula resupinata (Greene) Barnhart.

SMALL PURPLE BLADDERWORT.

Mud flats on pond borders from Pine, Ind., eastward, very common locally but easily passed by on account of its small size.

1586. UTRICULARIA CORNUTA Michx. Stomoisia, Raf.

HORNED BLADDERWORT.

Sandy shores of sloughs and ponds southeast, very abundant. Often tinting pond margins yellow by its numbers.

OROBANCHACEAE.

THE BROOM-RAPES.

Parasitic herbs, destitute of green foliage, with irregular flowers and minute seeds in pods.

200 species, widely distributed, with 4 in our district.

1587. EPIFAGUS VIRGINIANA (L.) Bart. Leptamnium Raf.

BEECH-DROPS.

Under beech trees, Wheeler, Ind. (Hill)

Very common in the beech forests eastward in Indiana and Michigan.

1588. CONOPHOLIS AMERICANA (L. f) Walr.

CANCER ROOT. SQUAW ROOT.

In open oak woods, rare. Lakeside, Maywood, Des Plaines. (Hill) In an oak woods at the Naval Station, North Shore. (Hill) Glen Ellyn. (Umbach)

Grows in isolated colonies far separated.

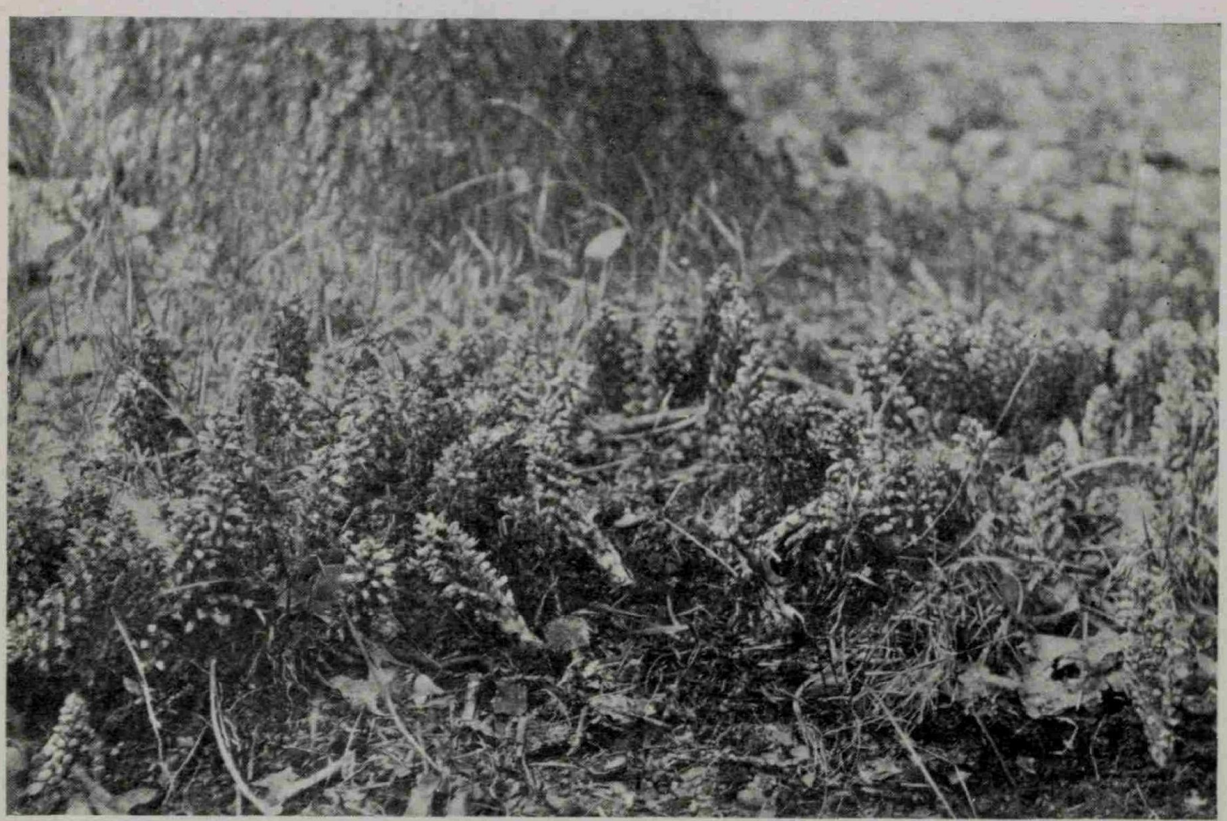
1589. OROBANCHE UNIFLORA L. Thalesia Brit.

BROOM-RAPE.

Shaded rich banks and ravines north, very rare. Along the Des Plaines River. North branch of the Chicago River. Lemont. (Hill) Riverside. Maywood. (B.)

Waukegan sand flats, common and very highly colored.

Beautiful specimens found at Tremont, Ind.



PEPOON

ROOT PARASITE

CANCER ROOT (*Conopholis*)

1590. OROBANCHE FASCICULATA Nutt. Thalesia Brit.

CLUSTERED BROOM-RAPE.

Sand ridges near Pine, Ind., growing invariably on Artemisia canadensis. Originally common, but habitat mostly destroyed and possibly exterminated.

Prof. Umbach found one specimen in 1898 on Calamovilfa longifolia in the Pine locality, but the writer has always found the host to be the Sand Wormwood.

A specimen was found at Pine with the root connection 32 inches in length and perfectly horizontal, four inches underground. This offers a knotty problem for solution. How did the tiny broom-rape seedling find a host 32 inches distant, and is the *always* horizontal connection a part of the broom-rape or of the wormseed?

A very local species with us and should be sought for elsewhere.

BIGNONIACEAE.

THE BIGNONIA FAMILY.

Woody plants, largely vines, mostly tropical. Seeds winged in large pods.

500 species, doubtfully 2 with us, and even if so, introductions from near-by nurseries or residence grounds.

1591. CATALPA SPECIOSA Warder.

WESTERN CATALPA.

Seemingly growing spontaneously about various towns and cities in our area.

This tree is native in southern Illinois, western Kentucky, and eastern Missouri.

1592. CATALPA BIGNONIOIDES Walt.

CATALPA.

Less common than the last but tending to become spontaneous.

ACANTHACEAE.

THE ACANTHIDS.

Mostly herbs, opposite leaved, irregular flowered.

2000 species, largely tropical, with 3 species in our limits.

1593. DIANTHERA AMERICANA L.

WATER WILLOW.

Des Plaines River north of Romeo, not common.

1594. RUELLIA STREPENS L.

SMOOTH RUELLIA.

Dry woods at our eastern limits, occasional.

1595. RUELLIA CILIOSA Pursh.

HAIRY RUELLIA.

Dry sandy soil near Homewood; also across the Des Plaines River at Lemont. (Hill)

On dry gravelly soil north of Romeo. (Umbach, Pepoon) Hawthorne, Riverdale. (Bastin) Palos Park and Wheatland. (Umbach)



WOODRUFF

ONE-FLOWERED BROOM-RAPE (*Orobanche uniflora*)

PHRYMACEAE.

THE LOPSEEDS.

1596. PHRYMA LEPTOSTACHYA L.

The one species of the Family. Common in rich woods, particularly along the Des Plaines and Chicago rivers.

This same species is found in the Himalaya Mts. of India and in Japan. A remarkable geographical distribution.

ORDER 33—PLANTAGINALES

One Family, the Plantain. Herbs, radical leaved, characters of the Family.

PLANTAGINACEAE.

THE PLANTAINS.

Herbs with basal ribbed leaves and small spicate flowers.

200 species, of wide distribution, with 7 in our district.

1597. PLANTAGO CORDATA Lam.

GREAT WATER PLANTAIN.

Rivulets in the north shore ravines. Common at Ravinia, Glencoe and north.

Frequent in ravines below Willow Springs in the Forest Preserve.

1598. PLANTAGO MAJOR L.

PLANTAIN. PALE PLANTAIN. WHITE MAN'S FOOT.

Occasional in waste places, not common, or is overlooked. May be recognized by its pale pubescent leaves that lie almost flat on the ground.

1599. PLANTAGO RUGELII Dene.

COMMON PLANTAIN. RED TALKED PLANTAIN.

Very common everywhere.

Practically the one species certain to be found. A thousand for every one of the former.

1600. PLANTAGO LANCEOLATA L.

BUCKHORN PLANTAIN. ENGLISH PLANTAIN. RIB-GRASS.

Rare in most of our area but becoming common eastward and along railways. An exceedingly pernicious weed in meadows and lawns, when once a foothold is gained.

Rather common in Irving Park, 1926, with impure lawn grass.

1601. PLANTAGO PURSHII R. & S.

PURSH'S PLANTAIN.

Railway near Naperville. (Umbach) Very infrequent.

1602. PLANTAGO ARISTATA Michx.

AWNED PLANTAIN. POOR JOE.

Abundant near the tower house at Clarke Junction, Ind., and on the Santa Fe Ry. at Lyons, Ill.

Dry soils of South Evanston. (Johnson)

Very local in its distribution but abundant in individuals.

1603. PLANTAGO VIRGINICA L.

DWARF PLANTAIN.

Evanston, Palatine, Des Plaines, Glencoe, Grand Crossing. (Higley, Bastin)

Collectors generally do not find this plant.

ORDER 34—RUBIALES

Three Families, the Madder, Honeysuckle, and Moschatel.

RUBIACEAE.

THE MADDERS.

Plants various, with simple, opposite or whorled leaves and perfect, regular, nearly symmetrical flowers. Fruit various, capsule, berry or drupe.

6000 species, mostly tropical, with 19 in our district, mostly Galiums.

1604. GALIUM APARINE L.

CLEAVERS. GOOSE GRASS.

Fence rows and shaded grounds, common everywhere.

1605. GALIUM PILOSUM Ait.

PILOSE CLEAVERS.

Dry thickets southeast, frequent, becoming abundant eastward into northern Indiana and Michigan.

1606. GALIUM CIRCAEZANS Michx.

WILD LIQUORICE.

Woods common throughout, especially in the rich open woods north and west along the Des Plaines River and the north branch of the Chicago River.

1607. GALIUM LANCEOLATUM Torr.

WILD LIQUORICE.

Open woods, common but less so than the preceding.

1608. GALIUM BOREALE L.

NORTHERN BEDSTRAW.

Gravelly banks, common eastward and near Waukegan. Frequent at Romeo. (Umbach)

1609. GALIUM TRIFIDUM L.

SMALL BEDSTRAW.

Bogs and marshy places, common throughout.

1610. GALIUM TRIFIDUM PUSILLUM Gray.

SMALL BEDSTRAW.

Marshes southeast. Miller. (Umbach)

1611. GALIUM CLAYTONI Michx.

CLAYTON'S BEDSTRAW.

Moist ground in pastures. Ross, Ind. (Hill)
This species becomes common just beyond our limits eastward.

1612. GALIUM TINCTORIUM L.

WILD MADDER.

Damp soils near Stony Island. (Babcock)
Warrenville. (Umbach)

1613. GALIUM LABRADORICUM Wiegand.

LABRADOR BEDSTRAW.

Tamarack swamp at Mineral Springs. (Cowles)
The only reported station.

1614. GALIUM CONCINNUM T. & G

SHINING OR WOODLAND BEDSTRAW.

Open dry woods, common. Our most abundant woodland species.

1615. GALIUM ASPRELLUM Michx.

ROUGH BEDSTRAW.

Alluvial soils of the Des Plaines, Chicago, and Calumet rivers, common.

1616. GALIUM TRIFLORUM Michx.

SWEET-SCENTED BEDSTRAW.

Woods, common throughout.
Found also in northern Europe, in the Himalaya Mts. and in Japan. (See lopseed.)

1617. DIODIA TERES Walt.

BUTTON WEED.

Dry sandy soils west of Dune Park, common. (Umbach)
Abundant westward along the Mississippi River and a common southern weed in barren soils.

1618. MITCHELLA REPENS L.

PARTRIDGE BERRY. TWIN BERRY.

Low, cool, boggy woods. Abundant in tamarack swamps southeast, particularly that at Mineral Springs.

1619. CEPHALANTHUS OCCIDENTALIS L.

BUTTON BUSH. HONEY BALLS.

Slough, pond and river margins, common throughout.

The largest seen were six inches in diameter and twenty feet tall

1620. HOUSTONIA CAERULEA L.

BLUETS. INNOCENCE.

Very common on the gravelly flats of the Little Calumet River, southeast near Tolleston.

Miller and Clarke, Ind. (Umbach) Beverly Hills, west slope. (Johnson)

1621. HOUSTONIA PURPUREA L.

LARGE BLUETS. VENUS' PRIDE.

Sandy soils southeast. Hessville, very rare. (Hill)

1622. HOUSTONIA LANCEOLATA (Poir.) Brit.

LANCE-LEAVED BLUETS.

Dry soil near the lake shore. Evanston. (Johnson)

CAPRIFOLIACEAE.

THE HONEYSUCKLES.

Shrubs with opposite leaves. (Rarely herbs.) The calyx adherent to the 2 5 celled ovary. Fruit various.

300 species of the Northern Hemisphere, with 19 in our district.

1623. DIERVILLA LONICERA Mill. Diervilla diervilla (L.) MacM.

BUSH HONEYSUCKLE.

Wooded banks along the north shore and southeast on all the steep dunes Formerly at Bowmanville.

1624. LONICERA TATARICA L.

TARTARIAN HONEYSUCKLE.

Occasional near dwellings north of Chicago near Lake Michigan.

1625. LONICERA CANADENSIS Marsh.

FLY HONEYSUCKLE.

Moist rich woods near the Calumet River at West Pullman, rare.

Wilmette in damp woods, frequent. (Johnson)

Evanston. Niles woods. Des Plaines. (Bastin)

1626. LONICERA SULLIVANTII Gray.

YELLOW HONEYSUCKLE.

Wooded slopes and banks throughout, occasional. More common in the hilly woods northwest.

1627. LONICERA DIOICA L.

RED HONEYSUCKLE.

Moist woods of Bowmanville. Common southeast in the Dune region Occasional along the Des Plaines.

1628. SYMPHORICARPOS ORBICULATIS, Moench. S. symphoricarpos (L.) MacM.

CORAL BERRY. INDIAN CURRANT.

Roadsides north near Lake Michigan, an occasional escape. Rather frequent near Waukegan.

An abundant shrub farther south.

1629. SYMPHORICARPOS RACEMOSUS LAEVIGATUS Fernald.

SNOW BERRY.

Roadsides and fence rows, an escape from cultivation. Du Page Co. (Moffatt)

1630. LINNAEA BOREALIS AMERICANA (Forbes) Rehder. Linnaea americana Forbes.

TWIN FLOWER.

Formerly a large patch, as late as 1900, near Pine, Ind. Northeast of Miller, near Lake Michigan, in a hollow in the sand dunes. (Hill)

Excessively rare. The Pine station is now destroyed and Prof. Hill's seems the only one left.

The Miller station has thousands of plants extending for one-fourth of a mile. Will eventually be covered by a moving dune (1926), which at present is about seventy-five feet distant.

1631. TRIOSTEUM PERFOLIATUM L.

FEVERWORT. HORSE GENTIAN.

Open woods, scattered throughout but never abundant.

1632. TRIOSTEUM AURANTIACUM Bick.

FEVERWORT. SCARLET FRUITED HORSE GENTIAN.

With the last and often not distinguished from it. Not as common except locally.

1633. VIBURNUM OPULUS AMERICANUM (Mill.) Ait. V. opulus L.

HIGH BUSH CRANBERRY. WILD SNOWBALL.

Originally in a cold wood at Bowmanville. West of Clarke Junction, Ind., very rare and local.

Glencoe. Evanston. (Babcock)

Most common in the wet thickets of the depressions in the Waukegan sand region. Fine specimens here.

1634. VIBURNUM ACERIFOLIUM L.

DOCKMACKIE. MAPLE LEAVED ARROW-WOOD.

Common in all woodlands near Chicago, but most abundant southeast in the Dune region.

1635. VIBURNUM PUBESCENS (Ait.) Pursh.

DOWNY ARROW-WOOD.

Banks southeast. Clarke, Ind., and eastward, common.

"Probably all specimens collected as V. dentatum L. are this species." Prof. Hill has critically studied the species and gives the above as his judgment.



GATES

THE TWIN FLOWER AT HOME (*Linnaea borealis americana*)

1636. VIBURNUM DENTATUM L.

ARROW-WOOD.

Woods north and west, and dry ridges southeast. Many reports of this species seem to indicate that it is common, but the opinion of Profs. Hill and Umbach, as well as my own, seem to establish its rarity or absence from our area. (See V. pubescens.)

V. dentatum is common on the bluffs of northwestern Illinois. Found at Leyden. (Gates)

1637. VIBURNUM CASSINOIDES L.

WITHE-ROD.

Swamp borders of our eastern margin and eastward, occasional.

1638. VIBURNUM LENTAGO L.

NANNY BERRY. BLACK HAW.

Moist woods, common throughout.

1639. VIBURNUM PRUNIFOLIUM L.

BLACK HAW.

Moist soils, frequent along the Des Plaines and Calumet rivers.
Warrenville. Naperville. Lisle. (Umbach)

1640. SAMBUCUS CANADENSIS L.

ELDERBERRY.

Low grounds everywhere, common.

1641. SAMBUCUS RACEMOSA L.

RED ELDER.

Originally abundant in the neighborhood of Graceland Cemetery.

In cold swamps southeast, common, becoming a prominent shrub as one goes east and north.

ORDER 35—VALERIANALES

Two Families, the Valerian and the Teasel.

VALERIANACEAE.

THE VALERIANS.

Herbs, opposite leaved; calyx adherent; corolla tubular or funnel-form. Flowers clustered, commonly fragrant or odorous.

300 species, widely distributed, with 1 in our district.

NOTE:—Two species of Valerianella are found on all sides but no one appears to have reported them for our area. They are V. chenopodifolia and V. radiata.

1642. VALERIANA EDULIS Nutt.

VALERIAN.

Moist prairies throughout, common. The edible features are questionable unless one is an Indian.

Most abundant on the Waukegan moorland swales.

DIPSACACEAE.

THE TEASELS.

Herbs similar to the Composites but with distinct stamens.

140 species, of the Eastern Hemisphere, with 1 in our district.

1643. DIPSACUS SYLVESTRIS Huds.

WILD TEASEL.

Roadsides at Porter, Ind., at our eastern limit.

Near Austin. Washington Heights.

Common near Romeo along the drainage canal. (Umbach)

Abundant on Thorn Creek at Chicago Heights.

ORDER 36—CAMPANULALES

Four Families, the Gourd, Bell-wort, Lobelia, and Composite.

CUCURBITACEAE.

THE GOURDS.

Tendril-bearing herbs, mostly trailing, some climbing. Fruit generally large and fleshy.

700 species, mostly tropical, with 3 in our district.

1644. CUCURBITA FOETIDISSIMA H. B. K. Pepo (H. B. K.) Brit.

MISSOURI GOURD. CALABAZILLA.

Two different stations on the Wabash Ry. at Miller, Ind., one continuing until 1898 when the cold destroyed it. Another was reported in 1910 but not verified. The first specimen, first found in 1890, had a root six inches in diameter and was growing in a sand hill one-half mile south of Miller. (Umbach, Moffatt, Pepoon) Blossomed and bore fruit for a number of years.

This plant is hardy in the writer's garden at Irving Park.

1645. SICYOS ANGULATIS L.

BUR CUCUMBER. STAR CUCUMBER.

A few specimens locally in Lincoln Park and at Naperville. Doubtless introduced. (Umbach)

Along the Belt Ry. and in vacant washes, especially on low ground, where it is gradually spreading as a weed.

1646. ECHINOCYSTUS LOBATA (Michx.) T. & G. Micrampelis Raf.

WILD CUCUMBER. BALSAM APPLE.

Low grounds everywhere, abundant. Very fragrant at night.

CAMPANULACEAE.

THE BELLFLOWERS.

Herbs with milky juice. Alternate leaves, and regular flowers. Calyx adherent. Fruit a capsule.

1000 species, widely distributed, with 5 in our district.

1647. CAMPANULA AMERICANA L.

TALL BELLFLOWER.

Open rich woods and bottom lands, common.

Very abundant in the Des Plaines River and Niles woods.

1648. CAMPANULA ROTUNDIFOLIA INTERCEDENS Witasek. C. rotundifolia L.

BLUE BELL. HAREBELL.

Common on banks and steep slopes southeast. Very rare north

The Dunes plant is very unlike that of the limestone cliffs of northwestern Illinois, with its typical foliage.

1649. CAMPANULA APARINOIDES Pursh.

MARSH BELLFLOWER.

Marshes and swamps, common.

1650. CAMPANULA ULIGINOSA Rydb.

MARSH BELLFLOWER.

Frequent in marshes, not distinguished from the last and growing in similar places.

1651. SPECULARIA PERFOLIATA (L.) DC.

VENUS'S LOOKING-GLASS.

Dry sandy soils near Lake Michigan, frequent.

Very common in the dune region, becoming a weed in barren sandy fields.

LOBELIACEAE.

THE LOBELIAS.

Herbs with acrid milky juice. Alternate leaves and irregular tubular flowers. Fruit a pod.

600 species, widely distributed, with 6 in our district.

1652. LOBELIA CARDINALIS L.

CARDINAL-FLOWER. RED LOBELIA.

Low rich woods, frequent along streams.

Common along the lower Des Plaines River and in the low swales of the Dune region.



WOODRUFF

GREAT BLUE LOBELIA (*Lobelia siphilitica*)

1653. LOBELIA SIPHILITICA L.

GREAT BLUE LOBELIA.

Low grounds, very common. Occasionally white flowered.

1654. LOBELIA PUBERULA Michx.

DOWNY LOBELIA.

Sandy soil of Ravenswood and north. South Chicago. (Higley)
Found at Dune Park by Prof. Umbach.

1655. LOBELIA SPICATA Lam.

PALE SPIKED LOBELIA.

Dry gravelly or sandy flats and prairies, common.

1656. LOBELIA KALMII L.

KALM'S LOBELIA. BROOK OR BOG LOBELIA.

Sandy shores of sloughs and ponds southeast, common.
Very common on the Waukegan moorland.

1657. LOBELIA INFLATA L.

INDIAN TOBACCO.

Dry open fields, occasional. The medicinal species.
Often an occasional plant found along railway lines.

KEY TO THE COMPOSITES OF THE ASTERWORTS SERIES OF THE CHICAGO AREA

NOTE:—In some of the large Genera, like the Asters and Golden-rods, this key will locate the plants in the Genera and the more conspicuous species but will not attempt to separate closely related forms. For such consult the Keys of our Manuals.

If your plant does not fit into any of the following special feature keys marked * it will be determined by the last and general key.

*1 Plants, square stemmed, the paired leaves forming an encircling cup; flowers large, yellow	Cupplant	1763
*2 Plants strong, odorous or fragrant	*2	
*3 Other than above, with much divided or dissected leaves	*3	
*4 Plants with leaves in whorls	*4	
5 Plants with very sticky or gum-like upper portion, particularly involucre	Gum Weed	1675
*6 Plants with decurrent leaf lines on the stem	*6	
*7 Plants universally white, woolly or downy	*7	
*8 Plants with involucres forming burs	*8	
*9 Plants with involucres and usually leaves prickle-bearing or spiny	*9	

*2 Special Key for plants with strong odor.

Flowers in very small, greenish, numerous heads; leaves very finely divided	Sweet Wormwood	1844
Flowers white	A	
Flowers yellow	B	
A Odor disagreeable, strong; leaves finely dissected	Dog Fennel	1830
A Odor very pleasant; leaves finely dissected	Chamomile	1832
A Odor very pleasant; leaves lanceolate; involucre bracts silvery; everlasting	Everlasting	1756
B Leaf coarsely lobed; woodland plant	Bear's Foot	1759
B Leaf dissected	C	
C Plant low, branching, with small, dissected leaves; odor disagreeable	Dyssodia	1828
C Plant in flower tall; leaves cut pinnate; odor strong, bitter, aromatic	Tansy	1836

*3 Special Key for plants other than in *2, with dissected or much divided leaves.

Plants growing in water, the leaves out of water, not dissected; flowers yellow	Water Tickseed	1823
Plants not growing in water	A	
A Plants very tall with very large, coarsely divided leaves; flowers large, yellow	Rosin Weed	1760
A Plants not as above	B	

B	Heads very numerous and small, greenish; heads all of one kind	C	
B	Heads very numerous and small, greenish; heads of two kinds	F	
B	Heads larger, not green	G	
C	Leaves much divided	D	
C	Leaves pinnately divided into 5–7 small, narrow, entire segments	Kansas Mugwort	1842
D	Heads borne in a leafy terminal spike-like inflorescence	Biennial Wormwood	1843
D	Heads paniculate in a much branched inflorescence	E	
E	Leaves mostly smooth	Tall Wormwood	1837
E	Leaves silky, pubescent	Canada Wormwood	1838
F	Staminate heads many in long terminal racemes; pistillate heads few, below; leaves thin; annual	Ragweed	1769
F	Staminate heads many in long, terminal racemes; pistillate heads few, below; leaves thick; perennial	Western Ragweed	1770
G	Flowers white	H	
G	Flowers yellow	I	
H	Flowers small, very numerous in a terminal corymb; rays 5	Yarrow	1829
H	Leaves larger; many, terminating branches; rays many	Field Chamomile	1831
I	Pappus none or two short scales	J	
I	Pappus of two or four short, hispid awns	K	
J	The lower leaves often nearly entire, the upper pinnate; segments linear	Great Flowered Coreopsis	1808
J	All the leaves much divided into linear segments; rays often brown	Garden Coreopsis	1805
K	Akenes, or so called seeds, wedge shaped	Swamp Marigold	1821
K	Akenes, or so called seeds, obovate, very flat	Western Marigold	1819

*4 Special Key for Composite plants with whorled leaves.

Leaves in whorls of 3–6, thick, veiny, pubescent	Joe Pye Weed	1662
Leaves in whorls of 3–6, thin, nearly smooth	Joe Pye Weed	1663

*6 Special Key for plants with decurrent leaf lines on stem.

A	Flowers white or slightly tinted; flowers aster like	Boltonia	1704
A	Flowers yellow	B	
B	Rays 3–5 lobed or toothing at ends	Sneezeweed	1827
B	Rays rounded	Wingstem	1803

*7 Special Key for plants more or less covered with white down or wool.

A	Leaves prickle bearing	B	
A	Leaves not prickle bearing	C	
B	Leaves pinnate, the lobes cut; plants of sand dunes	Sand Thistle	1857

B	Leaves pinnatifid, very prickly	Western White Thistle . . . . . (Omitted)	
C	Leaves pinnatifid; flower heads very numerous, small; waste places.	Dusty Miller	
C	Leaves entire	D	
D	Leaves mostly basal, small, oval to oblong; flowers in small, terminal clusters. . . .	Cudweeds, 5 species	1751–1755
D	Leafy stemmed plants; basal leaves not prominent	E	
E	Low, diffuse, much branched; involucral bracts downy	Low Everlasting . .	1757
E	Erect plants	F	
F	Bracts dry, everlasting, purplish; leaves green above	Purple Everlasting	
F	Bracts not dry, not everlasting; whole plant white; heads very many	Mugwort	1841

*8 Special Key for plants whose involucres form burs.

A	Burs spherical; the bracts ending in fine, sharp hooks	B	
A	Burs oblong or ovoid; the hooks more or less branched	C	
B	Bracts straight, elongate; leaf petioles solid .	Great Burdock . . .	1855
B	Bracts curved, not elongate; leaf petioles hollow	Burdock	1853
C	Body of bur ovoid, twice as long as thick; bur densely prickly	Beach Cocklebur . .	1773
C	Body of bur oblong, more than twice as long as thick	D	
D	Hooks almost unbranched, smooth, nearly straight	Cocklebur	1771
D	Hooks much branched, hispid	Common Cocklebur .	1772

*9 Special Key for plants having prickly involucres and leaves. (Thistles).

A	Involucre little or not all prickly	B	
A	Involucre prickly	C	
B	Flower heads small, pale; leaves very prickly, deeply pinnatifid	Canada Thistle . . .	1863
B	Flowers large, deep purple; leaves slightly prickly; pinnatifid	Swamp Thistle . . .	1860
C	Plants low; flowers large or medium; deep purple; leaves green	D	
C	Plants tall; flowers medium, pale; leaves white beneath	F	
D	Flowers fragrant, very large, showy, very prickly; root solid	Pasture Thistle . . .	1861
D	Flowers not fragrant	E	
E	Similar to D1; root hollow; leaves pinnatifid, lobes blunt	Hill's Thistle . . .	1862
E	Taller; flowers medium; whole plant prickly; weed of pastures, etc.	Bull Thistle	1856
F	Leaves but little or not at all divided . . .	Tall Thistle	1859
F	Leaves pinnatifid	Field Thistle . . .	1858

Plants without any of the above special features	A of general key		
A	Leaves compound	B	
A	Leaves simple	G	
B	Flowers without rays (discoid) or with these inconspicuous; leaves pinnately 3–5 divided	C	
B	Flowers with conspicuous yellow rays	D	
C	Involucre (outer) of 5–8 ciliate bracts	Sticktight	1812
C	Involucre (outer) of 10–16 unequal green bracts	Sticktight	1813
D	Disk ellipsoid or cylindric	E	
D	Disk hemispherical or flat	F	
E	Disk ellipsoid, gray; rays pale, drooping; leaves 3–7 divided; leaflets lance	Pale Coneflower	1784
E	Disk cylindric or columnar; rays often with red; leaves with 5–9 narrow leaflets	Columnar Coneflower	1785
F	Disk flat, brownish; leaves with 3–5 entire, lance leaflets; flowers pale	Tall Coreopsis	1811
F	Disk hemispherical, yellow; leaves with 5–7 variously cut leaflets	Wild Golden-glow	1781
G	Plants with alternate, simple leaves	H	
G	Plants with opposite, simple leaves	a	
H	Plants with white flowers	I	
H	Plants with flowers not white	e	
I	Plants with large, 1–3″, long stalked flowers; leaves small, lobed	Ox-eye Daisy	1834
I	Plants with usually numerous, small or medium flowers	J	
J	Plants with large and broad root or extreme lower leaves	K	
J	Plants with small or no root leaves	O	
K	Plants tall, with leaves pale, glaucous; leaves palmate, angular	Pale Indian Plantain	1848
K	Plants not pale or as above	L	
L	Plants rough, scabrous; leaves oblong toothed or cut lobed	Parthenium	1764
L	Plants smooth	M	
M	Leaves lance-ovate, entire, strongly 5–7 ribbed	Ribbed Indian Plantain	1847
M	Leaves not thus	N	
N	Lower leaves broad, fan-shaped, green, toothed, angled	Great Indian Plantain	1847
N	Lower leaves triangular, lance shaped, serrate; heads many flowered	Smooth Indian Plantain	1846
O	Heads without rays	P	
O	Heads with rays, however small	Q	
P	Involucre cylindric, the bracts in one series, green-white edged	Fire Weed	1845
P	Involucre bell-shaped, the bracts in several series	Kuhnia	1669
Q	Pappus or scales of 3–4 stiff bristles; flowers many corymbed, 1″	Boltonia	1704
Q	Pappus of many small bristles	R	
R	Involucral bracts in one or two series, narrow, equal	S	

R	Involucral bracts in two to five series, the outer successively shorter	V	
S	Flowers 1½″, few, often purplish; stem simple, low	Robin's Plantain	1745
S	Flowers smaller; stems taller, branched at least above	T	
T	Rays very short, equalling disk; very leafy weeds; stem simple below	Horseweed	1749
T	Rays much longer, exceeding disk, conspicuous	U	
U	Leaves entire or nearly so, on stem, small, narrow lance	Field Daisy	1748
U	Leaves all toothed, lance-oblong, larger	White Top	1747
V	Plant smooth, bushy; leaves lance, sparsely toothed; flowers many, 5/6″	Panicled Aster	1733
V	Whole plant smooth; leaves long narrow, lance, entire; flowers about 1″	Many Leaved Aster	1721
V	Plant smooth; leaves lance, entire, rough edged; flowers ¾″ in flat corymbs	Umbelled Aster	1741
V	Plant pubescent or rough, hispid	W	
W	Leaves linear, very numerous; flowers small, very numerous; plant grayish	Many Flowered Aster	1725
W	Not as above	X	
X	Flowers few, large, 1″; leaves narrow, lance, entire, few, rough; corymbed	Feverfew Aster	
X	Not as above	Y	
Y	Stems hairy in lines; leaves narrow, toothed at middle; tall; many flowered ⅔″	Marsh White Aster	1732
Y	Not as above	Z	
Z	Leaves narrow, rigid, entire; plant bushy; dry, open grounds; flowers ½″	Heath Aster	1722
Z	Leaves lance, serrate; flowers small, ⅓″, one sided on branchlets	Side Flowered Aster	1730
a	Plants low, weak, of gardens and waste places; leaves ovate, toothed; flowers small	Galinsoga	1824
a	Plants taller, not as above	b	
b	Flowers small, largely axillary; leaves rough, hairy, lance; along streams	Eclipta	1776
b	Features not thus	c	
c	Leaves united at base around the stem, much wrinkled	Boneset	1667
c	Leaves sessile, elongate pointed, serrate	Sessile Leaved Boneset	1666
c	Leaves long petioled	d	
d	Leaves 3 nerved, serrate, the upper alternate, ovate-lance	River Boneset	1664
d	Leaves 3 nerved, serrate, broadly ovate	White Snakeroot	1668
e	Flowers red, purple, pink	f	
e	Flowers not with these color tints	u	
f	Plants simple stemmed; flowers in elongate spikes; leaves narrow	g	
f	Plants not as above	k	
g	Flowers in interrupted spikes	h	
g	Flowers in continuous spikes	j	

h	Plant tall; flower clusters or heads large, many, 25–40 flowered; leaves rough, lance	Scarious Blazing Star	1672
h	Plant slender, 2′ or less; leaves linear; heads few, many flowered	i	
i	Involucral bracts with elongate leaf-like tips	Blazing Star	1670
i	Involucral bracts short, rounded	Cylindrical Blazing Star	1671
j	Spikes stout; heads 5 flowered; bracts with acute colored tips	Prairie Blazing Star	1673
j	Spikes long, slender; heads 8–12 flowered; bracts blunt	Spiked Blazing Star	1674
k	Flowers very large with many narrow rays, on long peduncles	l	
k	Flowers not as above	m	
l	Leaves ovate-lanceolate, 5 nerved; rays rigid	Purple Cone Flower	1782
l	Leaves linear-lanceolate, 3 nerved; rays slender, drooping	Pale Purple Cone Flower	1783
m	Heads without rays	n	
m	Heads with rays	r	
n	Involucral bracts tipped with long appendages	o	
n	Involucral bracts blunt or rounded or not appendaged	p	
o	Pappus purple	New York Ironweed	1658
o	Pappus straw colored	Broad Leaved Ironweed	1659
p	Lower surface of leaves smooth or nearly so	q	
p	Lower surface of leaves tomentose	Illinois Ironweed*	
q	Heads densely cymose	Common Ironweed	1660
q	Heads loosely cymose	Tall Ironweed	1661
r	Involucral bracts in one or two nearly equal series	s	
r	Involucral bracts in two to five successively shorter series	t	
s	Rays innumerable, narrow, pale, conspicuous; plant erect, 1–3′	Daisy Fleabane	1746
s	Rays numerous, very short, inconspicuous; plant low, spreading	Spreading Fleabane	1750
t	Flowers large, 1½″, corymbed, numerous, often rose color instead of purple, leafy	Purple Aster	1707
t	Flowers medium. NOTE:—Here belong the following, all having at times purplish tints, difficult to separate:		
	With small, silky leaves	Silky Aster	1709
	Like small, purple aster	Oblong Leaved Aster	1706
	Great heart-shaped leaves.	Great Leaved Aster	1705
	Oblong, clasping leaves	Violet Purple Aster	1710
	With squarrose involucre	Anomalous Aster	1712
	With lance toothed leaves	Willow Leaved Aster	1734
	Very long linear leaves	Long Leaved Aster	1735
u	Plants with blue, violet, lavender flowers	v	
u	Plants not with any of the above key colors	3	
v	Rays or marginal flowers tubular, with 5 lobes; leaves entire, woolly	Corn Flower	1865

*Inserted in the Key but not as yet found in the Area.

v	Rays ordinary, flat structures. Here belong a dozen or more of the blue, violet and lavender tinted asters, many very difficult to separate by key distinctions. The tints vary greatly—white forms are common. Even for the trained botanist they, at times, offer plenty of difficulties to sure determination	w	
w	Leaves many at least, with petioled, heart-shaped bases	x	
w	Leaves with sessile, more or less clasping bases	z	
w	Leaves with sessile not clasping base, linear; plant smooth; flowers at end of minutely leafy branchlets	Rice Button Aster . .	1726
x	Leaves oblong, on long slender stalks, smooth, entire; flowers large, blue	Short's Aster . . .	1714
x	Leaves not thus	y	
y	Leaves rigid, thick, rough, entire or nearly so; flowers many, medium, blue	Azure Aster	1713
y	Leaves large, thin, toothed; stalks often margined; flowers small, very numerous, very variable in color.		
	The small, lavender asters	Arrow Aster . . .	1717
		Heart Leaved Aster .	1716
		Drummond's Aster. .	1718
		Lowry's Aster*	
		Undulate Aster . . .	1715
z	Leaves enlarged at the clasping base . . .	Crooked Stem Aster .	1737
z	Leaves not thus enlarged	1	
1	Leaves linear or nearly so.	Rush Aster	1736
1	Leaves broader	2	
2	Plant very smooth, glaucous; leaves rough edged	Smooth Aster . . .	1720
2	Plant rough haired in lines; stem reddish as a rule	Red Stalked Aster . .	1738
3	Flowers green; leaves large, toothed, ovate, opposite, rough, weedy	Burweed Marsh Elder .	1765
3	Flowers yellow or orange	4	
4	Leaves alternate	5	
4	Leaves opposite	16	
5	Flower heads numerous, small, with few short rays, generally in corymbs or panicles; leaves usually small and many. No attempt to separate the species is here made. . . . . Consult Manuals.	Golden-rods, 28 Species 1703	1676-
5	Flowers of considerable or large size, not as above	6	
6	Flowers medium, in corymbs; plants small, never coarse	7	
6	Flowers large, variously borne; plants commonly large	8	
7	Leaves heart-shaped, slightly toothed . . .	Golden Ragwort 1 . .	1851
7	Leaves obovate or oblong with wedge-shaped bases, toothed	Golden Ragwort 2 . .	1850
7	Leaves oblong, variously cut, lobed or toothed	Golden Ragwort 3 . .	1852

*Inserted in the Key but not as yet found in the Area

8	Flowers borne on long peduncles; stems subsimple; disk brown-purple	Brown Eyed Susan	1779
8	Flowers borne on more or less leafy stems, not conspicuously peduncled	10	
8	Leaves nearly all basal	9	
9	Basal leaves very large, cordate-oblong; stems very tall	Prairie Dock	1761
9	Basal leaves medium, ovate, 3–5 nerved; the few small stem leaves opposite	Western Sunflower	1790
10	Leaves oblong, sesslie, densely tomentose beneath	Elecampane	1758
10	Leaves not as above	11	
11	Leaves 3 nerved	12	
11	Leaves not 3 nerved	14	
12	Leaves large, many, heart-shaped, rough; flowers often very large	Common Sunflower	1786
12	Leaves medium, narrowed at base, all petioled; flowers medium large, showy	Petioled Sunflower	1787
12	Leaves otherwise lobed	13	
13	Leaves thin, mostly 3 lobed; rays 8–12, orange	Small Brown-Eyed Susan	1777
13	Leaves thick, lower lobed, upper ovate, very rough; rays 15–20, yellow	Rough Brown-Eyed Susan	1778
14	Stem smooth, glaucous; leaves narrow, long, serrate	Great Toothed Sunflower	1792
14	Stem pubescent or rough	15	
15	Leaves very rough on both sides, long, narrow, folding on drying	Maximilian's Sunflower	1794
15	Leaves very rough above, hairy beneath, long, narrow, flat on drying	Great Sunflower	1793
16	Heads without rays or usually so	17	
16	Heads with rays, usually conspicuous	18	
17	Leaves lanceolate on winged petioles	Leafy-Bracted Tickseed	1815
17	Leaves lanceolate on slender petioles	Purple Stemmed Tickseed	1816
18	Pappus of two short teeth; low plants; stems, leaves few and small	19	
18	Pappus of two to six awns, downwardly barbed; tall coarse plants; leaves large and many	21	
19	Leaves palmately cleft into narrow lobes	Palmate Coreopsis	1809
19	Leaves undivided	20	
20	Plant smooth; flowers long stalked; rays toothed	Lance Leaved Coreopsis	1806
20	Plant soft, downy; flowers long stalked; rays toothed	Downy Coreopsis	1807
21	Leaves narrow, lanceolate to lance-oblong, pinnate veined	22	
21	Leaves broader, 3 nerved	23	
22	Very rough; leaves thick, rigid, serrate	Rough Sunflower	1788
22	Smooth; leaves pale beneath, denticulate	Smooth Sunflower	1789
23	Ray flowers persistent, short, firm	24	
23	Ray flowers easily deciduous, long, thin	25	
24	Rough, hairy	Rough Ox-eye	1775
24	Smooth, or nearly so	Smooth Ox-eye	1774
25	Leaves sessile	26	
25	Leaves petioled, though often very short	28	

26	Leaves rounded, soft, pubescent	**Downy Sunflower . .**	**1791**
26	Leaves oblong-ovate, very rough above, smooth beneath, base rounded	**Entire Leaved Rosin Weed**	**1762**
26	Features not as above	**27**	
27	Leaves divaricate, truncate at base, rough above, hairy below; stems smooth . . .	**Divaricate Sunflower .**	**1796**
27	Leaves not divaricate, narrowed at base; stem rough	**Oblong Leaved Sunflower**	**1797**
28	Stem smooth or nearly so	**29**	
28	Stem rough	**31**	
29	Leaves thin, slender stalked, sharply serrate .	**Pale Sunflower . . .**	**1801**
29	Leaves not thus	**30**	
30	Involucral bracts much longer than the disk .	**Throat Sunflower . .**	**1800**
30	Involucral bracts equalling the disk . . .	**Pale Leaved Wood Sunflower . . . . .**	**1798**
31	Involucral bracts appressed; flowers very showy; early blooming	**Showy Sunflower . .**	**1789**
31	Involucral bracts spreading; October blooming	**Artichoke Sunflower .**	**1802**

COMPOSITAE.

COMPOSITES. ASTERWORTS.

Flowers crowded into a head on a common receptacle and surrounded by an involucre.

Often divided into the Chicory, Ragweed, and Composite families.

At least 13,000 species, with 246 in our district.

ASTER SERIES

1658. VERNONIA NOVEBORACENSIS Willd.

NEW YORK IRONWEED. FLAT TOP.

Low ground near streams, not common.

Romeo. Clarke. (Umbach)

It is decidedly doubtful about the occurrence of this plant in our area, yet Prof. Umbach was a very careful and skilled botanist.

1659. VERNONIA GLAUCA (L.) Willd.

BROAD LEAVED IRONWEED.

Low ground, Palos Park and Naperville. (Umbach)

1660. VERNONIA FASCICULATA Michx.

COMMON IRONWEED.

Low grounds and wet prairies, common. Our most abundant species. Everywhere common in suitable locations.

It is very variable in size, form and special features.

1661. VERNONIA ALTISSIMA Nutt.

TALL IRONWEED.

Moist thickets and slough borders, Dune Park. (Hill) Porter, Ind., 1912. (Umbach)

NOTE:—The Vernonias need field study to clear up the obscurity as to species found. There are probably others not here listed.

1662. EUPATORIUM PURPUREUM L.

JOE-PYE WEED. PURPLE BONESET.

Low grounds and swamps, common.

A variable species and may be represented in our area by more than one form.

1663. EUPATORIUM MACULATUM L. E. purpureum maculatum (L.) Darl.

SPOTTED JOE-PYE WEED.

The common plant in open marsh borders and low grounds.

1664. EUPATORIUM SEROTINUM Michx.

LATE BLOOMING BONESET. RIVER BONESET.

Des Plaines River valley, common.
Damp prairies northwest of Evanston. (Jensen)
Dune Park. (Umbach, 1909)

1665. EUPATORIUM ALTISSIMUM L.

TALL EUPATORIUM.

Collected for Humboldt Park in 1895 from the locality for E. serotinum (Jensen)

1666. EUPATORIUM SESSILIFOLIUM L.

UPLAND BONESET.

Ravine banks north, infrequent. (Babcock)

1667. EUPATORIUM PERFOLIATUM L.

BONESET. THOROUGHWORT.

Low ground, common everywhere.

1668. EUPATORIUM URTICAEFOLIUM Reich.

WHITE SNAKEROOT. WILD AGERATUM.

Wooded banks, common, especially north and west Abundant in the Niles woods.
Very common on the wooded north slopes in the sand dunes.
Very easily cultivated.
Cows eating this plant produce very poisonous milk.

1669. KUHNIA EUPATORIOIDES L.

FALSE BONESET. KUHNIA.

Sandy hills, common southeast. Less frequent elsewhere.
Naperville. Warrenville. (Umbach)

1670. LIATRIS SQUARROSA Willd. Laciniaria (Hill)

SQUARROSE BLAZING STAR.

Dry soils near Pine, Clarke, and Dune Park, Ind., not common.

1671. LIATRIS CYLINDRACEA Michx.

CYLINDRIC BLAZING STAR.

Dry open places from the north shore south and east, frequent. Rogers Park. (Raddin) Naperville. Lisle. (Umbach)

1672. LIATRIS SCARIOSA Willd.

BLAZING STAR.

Dry barren hills and slopes, abundant southeast and southwest. Occasional throughout on suitable ground. Very variable as to size. Occasionally white.
This may be a polymorphic species that needs revision.

1673. LIATRIS PYCNOSTACHYA Michx.

PRAIRIE BLAZING STAR.

Wet prairies of the Des Plaines River and west, common, but gradually diminishing in numbers. Our finest species. Of easy cultivation.

1674. LIATRIS SPICATA (L.) Willd.

MARSH BLAZING STAR. GAY-FEATHER.

Moist soils, very abundant southeast. Occasional at Romeo. Common near Waukegan. White flowered forms are found.

1675. GRINDELIA SQUARROSA (Pursh.) Dunal.

GUM PLANT.

Belt Ry. at Stony Island, common. An introduction but the writer found a number in 1912 in a pasture in southwestern Michigan, ten miles from a railway and acting like a native. This area in 1925 was an acre in extent.

South end of Jackson Park. (Goldberger) Occasional on all main railways, where it undoubtedly is a tramp from the west.

THE SOLIDAGOS OR GOLDEN-RODS

1676. SOLIDAGO CAESIA L.

BLUE-STEM GOLDEN-ROD. WREATH GOLDEN-ROD.

Wooded banks southeast, common.

Much less common in the ravines along the north shore.

Our most dainty species.

1677. SOLIDAGO CAESIA AXILLARIS (Pursh) Gray.

With the type at Clarke and Miller, Ind. (Umbach)

1678. SOLIDAGO LATIFOLIA L. S. flexicaulis L.

BROAD LEAVED GOLDEN-ROD.

Wooded banks, common throughout. Especially abundant in the Niles woods and the ravines of the north shore.

1679. SOLIDAGO HISPIDA Muhl.

ROUGH-HAIRY GOLDEN-ROD.

Dry sand banks and steep hillsides, Miller, Ind., and east, rare.

1680. SOLIDAGO BICOLOR L.

WHITE GOLDEN-ROD. SILVER GOLDEN-ROD.

Sunny wooded banks, Miller and eastward, not common.

1681. SOLIDAGO RACEMOSA GILLMANI (Gray) Fernald. S. Gillmani (Gray) Steele.

DUNES GOLDEN-ROD.

Sand dunes, Miller and east. A striking species, growing in pure sand and blooming for a long period. Frequent locally. Often belated blossoms are found in October.

1682. SOLIDAGO ULIGINOSA Nutt.

BOG GOLDEN-ROD.

Bogs southeast, common.
Also abundant in the marshes north of Waukegan.

1683. SOLIDAGO SPECIOSA Nutt.

SHOWY GOLDEN-ROD.

Dry sandy ridges near Lake Michigan, common.
A very showy species when in full blossom.

1684. SOLIDAGO SPECIOSA ANGUSTATA T. & G. S. rigidiuscula (T. & G.) Port.

SLENDER SHOWY GOLDEN-ROD.

With the last in dry situations. Probably more common especially in the Dune region.

1685. SOLIDAGO PATULA Muhl.

SWAMP GOLDEN-ROD.

Swamps southeast in the Dunes. Abundant and showy.

1686. SOLIDAGO ARGUTA Ait.

CUT-LEAVED GOLDEN-ROD.

Pine and Miller, Ind., very rare.
Dune Park and Clarke. (Umbach)
This is a questionable station for the species.

1687. SOLIDAGO JUNCEA Ait.

EARLY GOLDEN-ROD.

Moist places, Glencoe, '98. Beach, '09. (Umbach)
Open woods and stream banks. (Higley)
The given habitat does not agree with the Manuals.

1688. SOLIDAGO NEGLECTA T. & G.

SWAMP GOLDEN-ROD.

Swamps of the Calumet region south of Lake Calumet. (Higley)
Wheatland, '98. (Umbach)

1689. SOLIDAGO ULMIFOLIA Muhl.

ELM LEAVED GOLDEN-ROD.

Copse borders, common throughout. An abundant and pretty species.

1690. SOLIDAGO RUGOSA Mill.

ROUGH LEAVED GOLDEN-ROD.

Damp thickets southeast in the Dune region, common. Less frequent in other regions or absent.

1691. SOLIDAGO MISSOURIENSIS Nutt.

PRAIRIE GOLDEN-ROD.

Prairies west, common.
Naperville, Warrenville, Wheatland. (Umbach)
An uncommon species in the rest of the area.

1692. SOLIDAGO NEMORALIS Ait.

HILL GOLDEN-ROD. HOARY GOLDEN-ROD. GRAY GOLDEN-ROD.

Dry open soils, very common in all parts.
One of our handsome species. Especially fine on the sandy hills of Lake and Porter Cos., Ind.

1693. SOLIDAGO CANADENSIS L.

COMMON GOLDEN-ROD. CANADA GOLDEN-ROD.

Everywhere, common and variable. Commonly the host of a species of blister beetle.

1694. SOLIDAGO CANADENSIS GILVOCANESCENS Rydb. S. gilvocanescens Rydb.

HOARY CANADA GOLDEN-ROD.

Dry and barren open places, frequent.

1695. SOLIDAGO ALTISSIMA L.

TALL GOLDEN-ROD.

Rich open places, probably overlooked. Clarke, Ind. (Umbach)

1696. SOLIDAGO ALTISSIMA PROCERA (Ait.) Fernald.

Not separated from the preceding in Britton and Brown.
On high and dry grounds north, rare. (Babcock)

1697. SOLIDAGO SEROTINA Ait.

SMOOTH GOLDEN-ROD. LATE GOLDEN-ROD.

Rich soils, common throughout. Particularly partial to alluvial grounds. A fine species.

1698. SOLIDAGO SEROTINA GIGANTEA (Ait.) Gray.

GREAT GOLDEN-ROD.

Damp woods and open spaces, frequent. Naperville. (Umbach)

1699. SOLIDAGO RIGIDA L.

STIFF GOLDEN-ROD. HARD LEAVED GOLDEN-ROD.

Prairies, common. Particularly in dry sterile soils.
A very abundant and striking species.

1700. SOLIDAGO OHIOENSIS Riddell.

OHIO GOLDEN-ROD.

Moist ground southeast in the Dunes, common.
Found in one locality at Warrenville, Du Page Co. (Umbach)
Found commonly on the Waukegan moorland.

1701. SOLIDAGO RIDDELLII Frank.

PRAIRIE GOLDEN-ROD. RIDDELL'S GOLDEN-ROD.

Wet prairies, frequent throughout but most abundant west and southwest, becoming scarce because of hay operations.
Common on the marsh borders of the Waukegan moorland.

1702. SOLIDAGO GRAMINIFOLIA (L.) Salisb. Euthamia Nutt.

NARROW LEAVED GOLDEN-ROD. FLAT-TOP GOLDEN-ROD. FRAGRANT GOLDEN-ROD.

Low grounds, common and very variable. Often growing on dry soils and then quite different from the low ground form. One of the few Golden-rods with a leaning toward a weedy nature.

1703. SOLIDAGO TENUIFOLIA Pursh. Euthamia (Pursh.) Greene.

SLENDER LEAVED GOLDEN-ROD.

Sandy wet soil near Miller and Dune Park, and southeast generally.

1704. BOLTONIA ASTEROIDES (L.) L'Her.

BOLTONIA.

Low grounds southeast, frequent. Glen Ellyn. Along the lower Des Plaines River.
Often cultivated.

ASTERS. MICHAELMAS DAISIES

1705. ASTER MACROPHYLLUS L.

GREAT LEAVED ASTER.

Dry wooded hills, common. Particularly in the northern portion of our area. Very abundant in the forests near Lake Michigan and equally common on old dune hills southeast.
An early blooming species.

1706. ASTER OBLONGIFOLIUS Nutt.

OBLONG-LEAVED ASTER.

Banks of the Des Plaines River near Maywood, rare. (Babcock)
Oak Glen on the Chicago River. (Raddin)

1707. ASTER NOVAE-ANGLIAE L.

PURPLE ASTER. NEW ENGLAND ASTER.

Low grounds, common throughout, but most abundant west and north. Rays occasionally white. Very variable as to size and tint of the ray flowers. Often cultivated.

1708. ASTER NOVAE-ANGLIAE ROSEUS DC.

ROSE-COLORED ASTER.

With the type, very rare and local. Naperville. Wheatland, rare. (Umbach) Edgebrook and Niles.
A very handsome variety.

1709. ASTER SERICEUS Vent.

SILKY ASTER.

Dry sandy soils, common north and southeast. Very local in distribution. Rarely found at Naperville and Warrenville.

1710. ASTER PATENS Ait.

LATE PURPLE ASTER. PURPLE DAISY.

Big woods at Evanston. (Raddin) Warrenville. (Umbach)

1711. ASTER PATENS PHLOGIFOLIUS Nees. A. phlogifolius Muhl.

THIN-LEAVED PURPLE ASTER.

Shaded banks of the Des Plaines River near Maywood, very rare. (Babcock)

1712. ASTER ANOMALUS Engelm.

ANOMALOUS ASTER.

Rocky wooded banks along the Des Plaines River below Lyons.

1713. ASTER AZUREUS Lindl.

SKY BLUE ASTER.

Dry soils, common, particularly southeast. Our common dry hillside species. Very far from a sky-blue tint.

1714. ASTER SHORTII Lindl.

SHORT'S ASTER.

Wooded banks at Edgebrook, common. A beautiful species.
Wooded thickets, Naperville.
Very local in distribution. Blooming late.

1715. ASTER UNDULATUS L.

WAVY ASTER.

Dry open woods and thickets, frequent. (Higley)

There may be some error here as most of our botanists do not find it.

1716. ASTER CORDIFOLIUS L.

HEART-LEAVED ASTER.

In woods, rather frequent but commonly mistaken for the next species. More abundant along our western border.

1717. ASTER SAGITTIFOLIUS Wed.

ARROW-LEAVED ASTER.

In woods, common. Far more common in most places than the preceding Very variable as to color, inflorescence and size of plant. Takes most kindly to cultivation as does the next.

1718. ASTER DRUMMONDII Lindl.

DRUMMOND'S ASTER.

Common along the Des Plaines and Calumet rivers and in the northwest part of Cook Co. Frequent also in many places in the Dunes.

1719. ASTER TURBINELLUS Lindl.

PRAIRIE ASTER.

On dry prairie elevations near Evanston, Woodlawn. Very rare. (Babcock)

1720. ASTER LAEVIS L.

SMOOTH ASTER.

Dry open soils, common. Particularly abundant north along the lake bluff. Common locally southeast.

Very ornamental. Cultivated in several forms.

1721. ASTER POLYPHYLLUS Willd. A. Faxoni (Willd.) Port.

MANY LEAVED ASTER.

Swamps and low places, not common. (Babcock)

Apparently overlooked by most collectors or now vanished.

1722. ASTER ERICOIDES L.

HEATH ASTER. FROST WEED.

Dry open places; common in the dry land in southwestern part of Cook Co. As a rule not abundant.

Glencoe, Naperville, Miller. (Umbach)

Frequent on the dry slopes of Salt Fork.

In the south (Ky.) this species becomes a weed.

1723. ASTER ERICOIDES VILLOSUS T. & G.

VILLOUS ASTER.

Dry soil, Stony Island. Along Thorn Creek, rare. (Hill)

Naperville. (Umbach)



PEPOON

MICHAELMAS DAISIES (*Aster dumosus*)

1724. ASTER ERICOIDES PLATYPHYLLUS T. & G.

BROAD LEAVED ASTER.

Similar locations near the lower Des Plaines River.

1725. ASTER MULTIFLORUS Ait.

SMALL WHITE ASTER.

Dry prairies, very common. Sandy open places south and east. Exceedingly abundant on the prairies west of Chicago.

1726. ASTER DUMOSUS L.

BUSHY ASTER. RICE BUTTON ASTER.

Sandy flats southeast, common. Dry open sandy woods.

1727. ASTER DUMOSUS STRICTOR T. & G.

STRICT ASTER.

Sandy soil near Mt. Tom, at the eastern margin of our area. (Umbach)

1728. ASTER VIMINEUS Lam.

SMALL WHITE ASTER.

Banks of streams and moist places, common. Often top-heavy and decumbent. (Hill)

The flowers are very small.

1729. ASTER VIMINEUS FOLIOLOSUS (Ait.) Gray.

SMALL WHITE ASTER.

Dune Park in moist soil. (Umbach)

1730. ASTER LATERIFLORUS (L.) Brit.

SIDE FLOWERED ASTER. STARVED ASTER.

Thickets, common, especially in damp soils. Variable.
Very abundant in the Willow Springs region.

1731. ASTER LATERIFLORUS HIRSUTICAULIS (Lindl.) Port. A. hirsuticaulis Lindl.

HAIRY STEMMED ASTER.

Low rich thickets along the Des Plaines and in Niles woods, rare.

1732. ASTER TRADESCANTI L.

MICHAELMAS DAISY. MARSH WHITE ASTER.

Wet open soils, common. (Babcock)
Our abundant marsh aster.

1733. ASTER PANICULATUS Lam.

PANICLED ASTER. LARGE WHITE ASTER.

Especially abundant along railways and on disturbed soils in open places. An exceedingly variable species.

1734. ASTER SALICIFOLIUS Ait.

WILLOW ASTER.

Swamps southwest and south, rare. (Babcock) Common southeast of Naperville. (Umbach)
The writer finds it a rather frequent marsh species throughout our range.

1735. ASTER LONGIFOLIUS Lam.

LONG-LEAVED ASTER.

Dry or moist soil at Palos Park. (Umbach) Determined by National Herbarium.

1736. ASTER JUNCEUS Ait.

BOG ASTER. RUSH ASTER.

Bogs southeast, common. Abundant in neighborhood of Clarke, Pine and Miller, Ind.

1737. ASTER PRENANTHOIDES Muhl.

CROOKED-STEMMED ASTER.

Steep wooded banks of the north branch of the Chicago River, Salt Fork, and the Des Plaines River, infrequent.

1738. ASTER PUNICEUS L.

SWAMP ASTER. RED-STEMMED ASTER.

Swamps, common. Variable in ray color, a showy species. Very variable in size of plant, foliage and stem features.

1739. ASTER PUNICEUS FIRMUS (Nees.) T. & G.

RED-STEMMED ASTER.

Swampy wood border of Lake George and Wolf Lake. (Hill)

1740. ASTER PUNICEUS LUCIDULUS Gray.

SHINING-LEAVED ASTER.

Same situation as the type.

1741. ASTER UMBELLATUS Mill. Doellingeria umbellata (Mill.) Nees.

UMBELLED ASTER. FLAT-TOP ASTER.

Low thickets, common. Particularly abundant southeast in the sand region.

1742. ASTER LINARIIFOLIUS L. Ionactis Greene.

FLAX-LEAVED ASTER. STIFF ASTER.

Sand hills, common southeast. Less frequent north except on the sandy Waukegan flats.

A late blooming and beautiful species.



PEPOON

OCTOBER: NARROW OR FLAX-LEAVED ASTER
(*Aster linariifolius*)

1743. ASTER PTARMICOIDES T. & G.

STIFF ASTER. SAND ASTER.

Sand flats southeast, common. Also in the sand regions north.

A form growing at Englewood, possibly var. lutescens, Gray, is reported by Prof. Hill as follows, "Some plants with yellowish rays and decidedly yellow disk flowers; others nearly white; heads smaller than normal; leaves nearly or quite clasping, long linear-lanceolate and inclined to be smoother than the ordinary—something like Solidago Riddellii or tenuifolia, both of which are common in the same locality and all grow more or less intermingled. If crosses between Asters and Golden-Rods be possible I should take this for one."

1744. ASTER ANGUSTUS (Lindl.) T. & G. Brachyactis angusta (Lindl.) Brit.

ANNUAL ASTER. RAYLESS ASTER.

Common in vacant lots in Chicago, particularly on the west and southwest sides.

1745. ERIGERON PULCHELLUS Michx.

ROBIN'S PLANTAIN. DAISY.

Dry open banks north, common. Less abundant southeast. Always growing in small colonies.

1746. ERIGERON PHILADELPHICUS L.

FLEABANE.

Moist open lands, common. Especially abundant on low-lying meadows.

1747. ERIGERON ANNUUS (L.) Pers.

DAISY. DAISY FLEABANE. WHITE TOP.

Common in fields, particularly in old and neglected meadows. In regions south this plant often makes up one-half or more of the hay crop of alluvial hay lands. An orchard pest of increasing frequency.

1748. ERIGERON RAMOSUS (Walt.) B. S. P.

DAISY FLEABANE. FIELD DAISY.

Common in fields but less so than the last.

1749. ERIGERON CANADENSIS L. Leptilon (L.) Brit.

HORSE-WEED. BLOOD-STAUNCH. MARE'S-TAIL.

Waste places, common. A valuable domestic medicine as indicated by the second common name.

1750. ERIGERON DIVARICATUS Michx. Leptilon.

DWARF FLEABANE. PURPLE FLOWERED HORSE-WEED.

Very rare along state line on railways out of South Chicago. (Babcock) Overlooked or not now present.

1751. ANTENNARIA PLANTAGINIFOLIA (L.) Rich.

LADY TOBACCO. INDIAN TOBACCO.

Dry open places, common throughout.
Very variable in size of plant and foliage.

1752. ANTENNARIA FALLAX Greene. (Not recognized by Britton.)

INDIAN TOBACCO.

Rich open woods, common northward along the north shore in openings in the woodlands.

1753. ANTENNARIA NEODIOICA Greene.

SMALLER CAT'S-FOOT.

Dry open woods, common north, near Lake Michigan.

1754. ANTENNARIA NEGLECTA Greene.

FIELD CAT'S-FOOT.

Dry open fields, Naperville. (Umbach)
In dry open grassy places, often forming dense mats.
NOTE:—There may be other species but collectors do not report them. The genus is a difficult one for specific determination.

1755. ANAPHALIS MARGARITACEA (L.) B. & H.

PEARLY EVERLASTING.

Dry open hillsides, common, particularly so southeast on the old dune slopes.

1756. GNAPHALIUM POLYCEPHALUM Michx. G. obtusifolium L.

COMMON EVERLASTING. SWEET EVERLASTING. POVERTY WEED.

Old fields and open places, common. Easily determined by its rank odor.

1757. GNAPHALIUM ULIGINOSUM L.

LOW CUDWEED.

Low sandy wet places, Miller and Dune Park. Not common except locally.

1758. INULA HELENIUM L.

ELECAMPANE.

Roadsides, very infrequent. More common eastward. Abundant in southwestern Michigan. Probably all escapes from cultivation as a domestic medicinal plant.

1759. POLYMNIA CANADENSIS L.

LEAFCUP. BEAR'S-FOOT.

Rich woods near Des Plaines River, common. Niles woods, near Evanston. Ravine at Glencoe.

Being powerfully odorous it is a surprise to find that the flowers are insignificant. The books do not mention the fragrance at all.

1760. SILPHIUM LACINIATUM L.

ROSIN-WEED. COMPASS PLANT.

Prairies common. Children use the white exudations from the broken stems for chewing gum. A long persisting proof of original prairie.

1761. SILPHIUM TEREBINTHINACEUM Jacq.

PRAIRIE DOCK. COMPASS PLANT.

Prairies, common locally. Has a strong predilection for dry knolls and warm gentle slopes. A striking plant by reason of its great leaves and tall, naked flowering stems.

1762. SILPHIUM INTEGRIFOLIUM Michx.

ENTIRE LEAVED ROSIN-WEED.

Prairies, common, particularly on the margins of low grounds.

1763. SILPHIUM PERFOLIATUM L.

CUP PLANT.

Low ground, common, particularly along the Des Plaines and Du Page rivers.

Probably in part insectivorous, the drowned insects giving considerable nitrogenous food.

Easily cultivated and rapidly increasing in size of clumps.

1764. PARTHENIUM INTEGRIFOLIUM L.

AMERICAN FEVERFEW.

Dry open places in woodlands north and west, common. A prairie thicket border plant. Far more common in the wooded regions, like the northwestern part of Illinois.

1765. IVA XANTHIFOLIA Nutt.

MARSH ELDER.

Common locally in waste ground near the lake, from Montrose Blvd. south to Illinois St. (Moffatt, Pepoon) Very rapidly extending its area.

A hay fever plant of equal virulence with its relative, Ambrosia.

1766. AMBROSIA BIDENTATA Michx.

TWO-TOOTHED RAGWEED.

A single plant on the C. & A. Ry. near Brighton Park in 1893. (Moffatt) Evidently a waif.

This plant is abundant farther south in central and southern Illinois, as a roadside weed and may be looked for in sandy barrens.

1767. AMBROSIA TRIFIDA L.

GREAT RAGWEED. HORSE WEED. HAY FEVER WEED.

Low grounds and waste lands, common. Becoming a vacant lot weed.

Illinois River bottom land specimens often measure 15 feet in height and an inch in stem diameter.

1768. AMBROSIA TRIFIDA INTEGRIFOLIA (Muhl.) T. & G.

ENTIRE-LEAVED HORSE-WEED.

Wheatland and Naperville along the Du Page. (Umbach) Various localities in Chicago.

1769. AMBROSIA ARTEMISIIFOLIA L. A. elator L.

RAGWEED. HOGWEED. HAY FEVER WEED. BITTER WEED.

Common in vacant places, roadsides, pastures and streets. The hay fever plant, par excellence. The pollen is exceedingly fine, light and tubercled, causing serious irritation of the air passages.

1770. AMBROSIA PSILOSTACHYA DC.

WESTERN RAGWEED. PERENNIAL RAGWEED.

Dry soils, occasional in dense patches. The common ragweed on the dry railroad fills, where it is most frequently met with.

1771. XANTHIUM CANADENSE Mill. X. pennsylvanicum Wallr.

COCKLEBUR. CLOTBUR.

Waste places and vacant lots. Damp, rich or sandy soils.

The xanthiums are commonly grouped as one species without due investigation. There are probably more species with us than are here recorded. (See Sherff's Revision of the Genus.)

1772. XANTHIUM COMMUNE Brit.

COCKLEBUR. CLOTBUR.

Vacant places, waste grounds, fields, railroad grounds.

This is the common species of the area.

1773. XANTHIUM ECHINATUM Murr.

BEACH COCKLEBUR. COCKLEBUR.

Sandy soils near Lake Michigan. The lake shore species, common throughout the extent of our area.

1774. HELIOPSIS HELIANTHOIDES (L.) Sweet.

OX-EYE. FALSE SUNFLOWER.

Banks and thicket borders, not common, but generally distributed.

1775. HELIOPSIS SCABRA Dunal.

ROUGH OX-EYE.

Very common in low places, thicket borders and along railways.

1776. ECLIPTA ALBA (L.) Hassk. Verbesina alba L.

YERBA DE TAJO.

Banks of Calumet River west of Gary, Ind. The only locality. (Higley)

Seemingly native but as this is the only locality is probably an introduction.

1777. RUDBECKIA TRILOBA L.

CONE-FLOWER. SMALL BROWN-EYED SUSAN.

West bank of the Des Plaines River between Maywood and Riverside. Glen Ellyn, frequent. (Moffatt) Leyden. (Gates) Along Salt Creek, north of LaGrange.

Very showy and fine in cultivation.

1778. RUDBECKIA SUBTOMENTOSA Pursh.

SWEET CONE-FLOWER. ROUGH BROWN-EYED SUSAN.

Banks of the Des Plaines River, north branch of the Chicago River and the Calumet River. Frequent locally.

One of the few fragrant composites.

1779. RUDBECKIA HIRTA L.

BLACK-EYED SUSAN. YELLOW DAISY. BROWN-EYED SUSAN.

Dry open soils, very common. Abundant in open grassy marshes, exceedingly variable, occasionally double. The varieties bicolor, rubra, annulata, tubuliforma and flavescens are recognized by Britton.

Much more vigorous when a marsh border plant.

1780. RUDBECKIA FULGIDA Ait.

ORANGE CONE-FLOWER.

Along the I. C. Ry. south of Chicago. Introduced from the south.

1781. RUDBECKIA LACINIATA L.

WILD GOLDEN GLOW. TALL CONE-FLOWER.

Common along the Des Plaines River, Salt Creek, north branch of the Chicago River, the Calumet Rivers and the bottoms of all the larger streams.

The original of the garden Golden Glow.

1782. BRAUNERIA PURPUREA (DC.) Brit. Echinacea (L.) Moench.

PURPLE CONE-FLOWER.

Open high prairies of the Valparaiso moraine. Less common than the next.

The last refuge of this fine plant is the railroad right of way.

Noted in medicine.

1783. BRAUNERIA PALLIDA (Nutt.) Brit.

PALE PURPLE CONE-FLOWER.

Prairies west. The nearest approach to Chicago just west of Downers Grove along the C. B. & Q. Ry.

1784. LEPACHYS PINNATA (Vent.) T. & G. Ratibida (Vent.) Barnhart.

PALE CONE-FLOWER. GRAY-HEADED CONE-FLOWER. DROOPING CONE-FLOWER.

Dry open places throughout, occasional. An evidence of undisturbed soil. A fine ornamental plant.



WOODRUFF

PURPLE CONE-FLOWER (*Brauneria pallida*)

1785. LEPACHYS COLUMNARIS (Sims) T. & G.

WESTERN CONE-FLOWER.

Along the rights of way of the western railways, occasional. Accidental introductions by freight trains.

1786. HELIANTHUS ANNUUS L.

SUNFLOWER.

Vacant lots, waste places and roadsides, very common.

The original western form has become common near the western railroad lines and has thoroughly established itself.

Many acres of vacant lands in the southwestern part of Chicago are overrun with this plant. The wild form has black seeds.

A plant of Kansas origin, raised by the writer, was ten feet in height, had thirty-five branches and at one time was covered with 311 flowers of medium size.

1787. HELIANTHUS PETIOLARIS Nutt.

PETIOLED SUNFLOWER.

Abundant along all railways in southern part of Chicago, particularly common from Englewood southeast. Rapidly widening its area. Exceedingly abundant at Gary, Ind.

One of the finest of the genus.

1788. HELIANTHUS SCABERRIMUS Ell.

STIFF SUNFLOWER. ROUGH SUNFLOWER.

Dry prairies north and west, occasional.

1789. HELIANTHUS LAETIFLORUS Pers.

SHOWY SUNFLOWER. SMOOTH SUNFLOWER.

Open fields and prairies, frequent.

The finest of all for cultivation but spreading rapidly like all the tuberous rooted species.

1790. HELIANTHUS OCCIDENTALIS Riddell

FEW LEAVED SUNFLOWER. WESTERN SUNFLOWER.

Common in dry open sandy places and on dry open knolls, both north and south. The so-called H. Illinoensis, Gleason, also occurs with the species, probably a variety.

1791. HELIANTHUS MOLLIS Lam.

DOWNY SUNFLOWER.

Common on the Wabash Ry. west of Clarke Junction, Ind. Miller and Porter, Ind. (Umbach)

Very local in distribution.

1792. HELIANTHUS GROSSESERRATUS Martens.

PRAIRIE SUNFLOWER. TOOTHED SUNFLOWER.

On open prairies, the most common wild species. Everywhere on moist prairies and variable as to size and character of foliage and flowers.

Like all sunflowers very easily cultivated.

1793. HELIANTHUS GIGANTEUS L.

MARSH SUNFLOWER. TALL SUNFLOWER. GIANT SUNFLOWER.

Marshes and low grounds, common, particularly southeast.

1794. HELIANTHUS MAXIMILIANI Schrad.

MAXIMILIAN'S SUNFLOWER.

On the Belt Ry. from Brighton Park to South Chicago, frequent.

1795. HELIANTHUS MICROCEPHALUS T. & G.

SMALL FLOWERED SUNFLOWER.

On the Pan Handle Ry. near Forest Hill, many plants.

1796. HELIANTHUS DIVARICATUS L.

STIFF SUNFLOWER. WOODLAND SUNFLOWER.

Common in thickets and brushlands. An abundant species eastward.

1797. HELIANTHUS HIRSUTUS Raf.

STIFF-HAIRED SUNFLOWER. OBLONG-LEAVED SUNFLOWER.

Dry soil from Evanston to Englewood and along the Des Plaines to Summit, rare. (Higley)

1798. HELIANTHUS STRUMOSUS L.

PALE LEAVED SUNFLOWER.

Banks of streams and moist borders of swamps, common.

Dune Park. (Hill) Naperville. Glencoe. (Umbach)

1799. HELIANTHUS STRUMOSUS MOLLIS T. & G. Var. macrophyllus Brit.

SOFT PALE SUNFLOWER.

Riverside near the Des Plaines River. Banks of Calumet River. Miller, Ind., rare. Washington Heights. (Hill) Also at East Chicago.

1800. HELIANTHUS TRACHELIIFOLIUS Mill.

THROATWORT SUNFLOWER.

From Hyde Park south and east, rare. (Babcock)

Clarke, Ind., in woods. (Hill)

1801. HELIANTHUS DECAPETALUS L.

PALE SUNFLOWER.

Thickets throughout, common.

1802. HELIANTHUS TUBEROSUS L.

ARTICHOKE.

Low grounds; common along the Chicago River. Thorn Creek, near Glenwood. (Hill)

Du Page River valley. Lisle. Naperville. (Umbach)

Copiously tuber bearing.

The latest blooming species, often as late as October, and consequently rarely ever ripening seed.

1803. ACTINOMERIS ALTERNIFOLIA (L.) DC. Ridan alternifolius (L.) Brit.

WING STEM.

Rich soil near streams. Du Page, Chicago, and Des Plaines rivers.

Very abundant along Thorn Creek at Chicago Heights.

1804. VERBESINA HELIANTHOIDES Michx. Phaethusa (Michx.) Brit

SUNFLOWER CROWN-BEARD.

Mostly along western margin of our Area, rare. Hinsdale. (Babcock)

1805. COREOPSIS TINCTORIA Nutt.

GARDEN COREOPSIS.

Along railways, occasional. Naperville, Clyde. (Umbach)

1806. COREOPSIS LANCEOLATA L.

SAND COREOPSIS. LANCE-LEAVED TICKSEED.

Very abundant in the sand regions near Lake Michigan. Often cultivated. Much more common southeast.

1807. COREOPSIS LANCEOLATA VILLOSA Michx. C. crassifolia Ait.

DOWNY COREOPSIS.

On the summit of a limestone ledge at Lemont. (Hill, 1899) Beach near Waukegan. (Umbach)

Sand ridges from Graceland north to the Waukegan moorland.

A colony east of Clark St. and Byron St. persisted until 1910 or later.

1808. COREOPSIS GRANDIFLORA Hogg.

LARGE FLOWERED TICKSEED.

Ballast plant along the railroads at Aetna and Gary. (Umbach)

1809. COREOPSIS PALMATA Nutt.

PRAIRIE COREOPSIS.

Dry open knolls and slopes, common. Also abundant on the prairies west. A true original prairie plant.

Abundant in open woodlands of Chicago Heights adjacent to Thorn Creek.

1810. COREOPSIS MAJOR Walt.

WOOD TICKSEED.

Dry sandy soils, Aetna, Gary, Miller.

1811. COREOPSIS TRIPTERIS L.

TALL COREOPSIS. PALE COREOPSIS.

Common in open brush lands throughout.

1812. BIDENS FRONDOSA L.

STICK-TIGHT. (And many other names. See next species.)

Common in low grounds everywhere.

1813. BIDENS VULGATA Greene.

STICK-TIGHT. SPANISH NEEDLES. DEVIL'S PITCHFORKS. PITCHFORKS.

Common in all kinds of waste lands. The two species, this and the preceding, are commonly not separated by most observers.

1814. BIDENS VULGATA PUBERULA (Wiegand.) Greene.

STICK-TIGHT.

Wheatland. (Umbach)

1815. BIDENS COMOSA (Gray) Wiegand.

SWAMP TICKSEED. LEAFY-BRACTED TICKSEED.

Low grounds, shores of ponds, ditches and slow streams. Common.

1816. BIDENS CONNATA Muhl.

SWAMP BEGGARS'-TICKS. PURPLE-STEM TICKSEED.

Swamps and ditches, common everywhere.

1817. BIDENS CERNUA L.

NODDING BUR-MARIGOLD.

Wet places, common throughout the district.

1818. BIDENS LAEVIS (L.) B. S. P.

SMOOTH BUR-MARIGOLD. DITCH MARIGOLD.

Swamps and shoal waters, frequent, especially eastward.

1819. BIDENS TRICHOSPERMA (Michx.) Brit.

TALL SWAMP MARIGOLD. WESTERN MARIGOLD.

Marshes, common. Confused with the next.

In September great areas of wet land are solid sheets of gold from this species, or more commonly the next.

1820. BIDENS TRICHOSPERMA TENUILOBA (Gray) Brit.

SWAMP MARIGOLD.

In similar locations, less common. (Babcock)

1821. BIDENS ARISTOSA (Michx.) Brit. Coreopsis Michx.

SWAMP MARIGOLD.

Marshes and low grounds, common. Excessively abundant in open marshes, making solid masses of color, acres in extent.

1822. BIDENS INVOLUCRATA (Nutt.) Brit.

LONG BRACTED TICKSEED.

Railroad ditches south of Englewood. (Hill, 1898)

1823. BIDENS BECKII Torr. Megalodonta (Torr.) Greene.

WATER MARIGOLD. WATER TICKSEED.

Calumet River, Gary to East Chicago. Also at Miller, Ind. (Hill) Clarke, Ind. (Umbach, Pepoon)

1824. GALINSOGA PARVIFLORA Cav.

GALINSOGA.

Streets and waste places, common. Appeared in Chicago about 1886. Rapidly extending westward and northward.

1825. ACTINEA HERBACEA (Greene) Rob. Tetraneuris Greene.

FOUR-NERVED STAR FLOWER.

In the vicinity of Joliet at the southwestern border of our Area. (Clute, Cowles) The type locality. Very plentiful.

1826. HELENIUM NUDIFLORUM Nutt.

PURPLE-HEADED SNEEZEWEED.

Low alluvial soils, occasional. Intergrades or hybridizes with the next. Often cultivated.

1827. HELENIUM AUTUMNALE L.

SNEEZEWEED.

Very common in alluvial soils. One of our markedly poisonous plants. Takes kindly to cultivation.

1828. DYSSODIA PAPPOSA (Vent.) Hitchc. Boebera (Vent.) Rydb.

FETID MARIGOLD. FALSE DOG-FENNEL.

Waste places, Naperville. (Umbach) Glen Ellyn. (Moffatt) Along nearly all old trails and roads.

1829. ACHILLEA MILLEFOLIUM L.

YARROW. MILFOIL.

Dry open soils, common. A bad weed in pastures.
A rose colored race is very ornamental.
Of value medicinally.

1830. ANTHEMIS COTULA L.

DOG-FENNEL. MAY-WEED. PIG DAISY. CHIGGER-WEED.

Barnyards, roadsides, and waste places, common.
Its odor ruins it as an ornamental.



THE WHITE BINDWEED (*Convolvulus spithamaeus*)



YARROW (*Achillea millefolium*)
AT WILLOW SPRINGS IN JUNE

1831. ANTHEMIS ARVENSIS L.

FIELD CHAMOMILE.

Old fields in barren sandy soil.

Established near Palatine and Evanston. (Higley)

A very common field weed of Michigan and eastward.

1832. ANTHEMIS NOBILIS L.

CHAMOMILE. CAMOMILE.

Waste grounds at Naperille, '96 and '98. (Umbach)

1833. MATRICARIA CHAMOMILLA L.

WILD CAMOMILE.

Waste ground. Jackson Park, subsequent to the Columbian Exposition. Probably now exterminated.

1834. CHRYSANTHEMUM LEUCANTHEMUM L.

OX-EYE DAISY. WILD MARGUERITE. POVERTY WEED.

Abundant at Clarendon Hills. North of Waukegan. Belmont and 40th Ave. Locally along all railways.

The former station is extending very rapidly and in June the whole country is white with the myriad blooms.

1835. CHRYSANTHEMUM BALSAMITA TANACETOIDES Boiss. C. balsamita L.

COSTMARY. SWEET MARY. MINT GERANIUM.

Roadside town of Deerfield, west of Highwood. (Hill) Probably more widely distributed. Common in old gardens.

1836. TANACETUM VULGARE L.

TANSY.

Roadsides. Occasional in patches scattered throughout.

1837. ARTEMISIA CAUDATA Michx.

TALL WORMWOOD.

With the next in sandy soils. Probably the next species is the abundant one. Many plants have biennial roots but seem otherwise like the next.

Prof. Hill says, "I should not call it rare; in my experience it has been more common than A. canadensis in the dune region."

1838. ARTEMISIA CANADENSIS Michx.

CANADA WORMWOOD.

Evidently confused with A. caudata, the two species intergrade. Most specimens are perennial by off-shoots, the flowering plant dying to the root. These two species are the hosts of the root parasite, Orobanche fasciculatum.

1839. ARTEMISIA PROCERA Willd.

SMALL WORMWOOD.

Some large colonies on the road south of the Chicago River between Edgebrook and Jefferson Park.

1840. ARTEMISIA LONGIFOLIA Nutt.

LONG-LEAVED MUGWORT.

Along the C. & A. Ry. at Brighton Park, '96. (Umbach) Also on the Penn. Ry. at Clarke Junction.

1841. ARTEMISIA LUDOVICIANA Nutt. A. gnaphalodes Nutt.

MUGWORT. WHITE SAGE.

In dense patches here and there in dry open places. Ravenswood. North Shore occasional. Southeast, rare.

Widely distributed but very local. Used in Minnesota to keep away moths.

1842. ARTEMISIA KANSANA Brit.

KANSAS MUGWORT.

Along the B. & O. near Miller, Ind. A patch of these plants was discovered by Prof. Umbach here in 1899 and long persisted.

1843. ARTEMISIA BIENNIS Willd.

BIENNIAL WORMWOOD.

Waste places, common. Our only weed species.

1844. ARTEMISIA ANNUA L.

ANNUAL WORMWOOD. SWEET WORMWOOD.

Abundant west of the Des Plaines River at Lemont on a country road. (Hill)

On the Penn. Ry. at Clarke, Ind. (Umbach)

1845. ERECHTITES HIERACIFOLIA (L.) Raf.

FIREWEED.

Burnt clearings, common. While it may doubtless grow in other situations, it usually does not. The black scar left by burning a brush pile will almost always have a vigorous fringe of this plant.

1846. CACALIA SUAVEOLENS L.

SWEET SCENTED INDIAN PLANTAIN. SMOOTH INDIAN PLANTAIN.

Moist rich woods near Casella, Ind. (Hill) Very rare.

West of Porter near the Little Calumet River at the crossing of the L. S. Ry. Very rare. (Hill)

1847. CACALIA RENIFORMIS Muhl. Mesadenia (Muhl.) Raf.

GREAT INDIAN PLANTAIN. RIBBED INDIAN PLANTAIN

Low woods of the Des Plaines valley. Somewhat rare.

1848. CACALIA ATRIPLICIFOLIA L. Mesadenia (L.) Raf.

PALE INDIAN PLANTAIN.

Wooded hillsides, common. A very striking plant particularly common on the steep slopes of old and dead dunes.

1849. CACALIA TUBEROSA Nutt. Mesadenia (Nutt.) Brit.

TUBEROUS INDIAN PLANTAIN.

Wet prairies west of Chicago, very abundant, covering many acres of the marshy grasslands with its white blanket of bloom.

1850. SENECIO OBOVATUS Muhl. S. aureus var.

GOLDEN RAGWORT. ROUND LEAVED RAGWORT.

Open moist sandy soils north near Waukegan and southeast.

1851. SENECIO AUREUS L.

GOLDEN RAGWORT. LIFE-ROOT. SQUAW-WEED.

Wet meadows, very abundant. Very common west of Chicago, often tinting the prairie marshes in May with its gold and orange.

1852. SENECIO BALSAMITAE Muhl.

GOLDEN RAGWORT.

Common in the sandy soils southeast. Pine. Miller. Clarke.
Frequent north and west. (Higley)
Abundant in the sand region north of Waukegan.

1853. ARCTIUM MINUS Bernh.

COMMON BURDOCK.

Common in waste places.
There seems to be no genuine record of the occurrence of A. lappa in our area, although the Bulletin says "common." It is the species minus that occurs.

1854. ARCTIUM MINUS LACINIATA Hus.

Vicinity of Joliet. Type locality. (Clute)

1855. ARCTIUM LAPPA L.

GREAT BURDOCK.

A few plants at Olympia Fields, 1925. (Graham)

1856. CIRSIUM LANCEOLATUM (L.) Hill.

BULL THISTLE.

Common in pastures and roadsides.

1857. CIRSIUM PITCHERI (Torr.) T. & G.

SAND THISTLE. WHITE THISTLE.

Sand dunes near shore of Lake Michigan, common. Most abundant near Miller, Ind. The tap root often five to seven feet long, penetrating to moisture.

1858. CIRSIUM DISCOLOR (Muhl.) Spreng.

PRAIRIE THISTLE. FIELD THISTLE.

Moist prairies about Chicago, very common.

1859. CIRSIUM ALTISSIMUM (L.) Spreng.

TALL THISTLE. THICKET THISTLE.

Thicket borders, common.

1860. CIRSIUM MUTICUM Michx.

SWAMP THISTLE.

Common in swamps. Particularly abundant southeast. A very tall and many flowered species.

1861. CIRSIUM PUMILUM (Nutt.) Spreng. C. odoratum (Muhl.) Brit.

SWEET PASTURE THISTLE.

Dry open slopes, especially east. Common locally north and west on barren prairie knolls. A handsome plant.

1862. CIRSIUM HILLII (Canby) Fernald.

HILL'S THISTLE.

Sandy hills, Miller. Dune Park.

Takes the place of C. pumilum in the dune region. Abundant near Clarke. Was described in the Higley-Raddin Bulletin as C. undulatum.

1863. CIRSIUM ARVENSE (L.) Scop.

CANADA THISTLE.

Fields and waste places, common. Very abundant in vacant lots of Chicago.

1864. CENTAUREA JACEA L.

KNAPWEED. STAR THISTLE.

Railways of Edgemore. (Chase) Very infrequent.

1865. CENTAUREA CYANUS L.

CORN FLOWER. BACHELOR'S BUTTON.

Occasional in streets of Chicago and suburbs. Naperville. (Umbach)

1866. CENTAUREA MOSCHATA Linn.

SWEET SULTAN.

Persistent escape near Naperville. (Umbach) At brickyard north of Mineral Springs, Ind.

KEY TO THE CHICORY TRIBE OF COMPOSITE FAMILY

	Plants with leaves all attached to underground portion, or mostly thus, with only 1 or 2 leaves on stem	A	
	Plants with leaves plainly attached to an aerial stem, though often with root leaves	D	
A	Flowers large, on hollow, unbranched, naked stalks or scapes; leaves numerous, long, deeply lobed	B	
A	Flowers large or small on branching stalks.	C	
A	Flowers small, solitary, on solid flower stalk; leaves small, sinuate	**Dwarf Dandelion**	**1868**
B	Developed seeds (akenes) greenish-brown	**Dandelion**	**1873**
B	Developed seeds (akenes) red-brown	**Red Seed Dandelion**	**1874**
C	Flower stalk bearing usually one leaf near middle; flower orange; moist places	**Cynthia**	**1869**
C	Flower stalk naked; flower yellow; road sides; introduced	**Fall Dandelion**	**1870**
C	Flower stalk naked or with 1 or 2 small sessile leaves; flowers red, orange	**Devil's Paint Brush**	**1895**
D	Flowers normally shades of blue or violet	I	
D	Flowers normally yellow or orange	L	
D	Flowers pale, cream color or whitish	F	
D	Flowers purplish	E	
E	Flowers very large, blooming in early morning; leaves long, narrow	**Oyster Plant**	**1871**
E	Flowers small, very numerous in long, narrow panicle; plant tall, coarse	**Swamp White Lettuce**	**1890**
F	Flowers cream color; plants large, coarse; leaves large but little divided or angular lobed	G	
F	Flowers cream color; plants large, coarse; lower leaves deeply cleft	**Tall White Lettuce**	**1893**
G	Leaves oblong, denticulate or toothed; heads very many, hirsute	**Rough White Lettuce**	**1894**
G	Leaves angular lobed, broad; flowers many, paniculate	H	
H	Plant glaucous; involucre smooth, purplish	**White Lettuce**	**1891**
H	Plant smooth; involucre hirsute; plant very large	**Great White Lettuce**	**1889**
I	Plant 1–3′, glaucous; flowers large; leaves small, entire to pinnatifid, sessile, clasping	**Showy Blue Lettuce**	**1885**
I	Plant 1–4′, rough; flowers large, often white; stem leaves toothed, auricled, clasping	**Chicory**	**1867**
I	Plant tall, coarse; flowers medium; leaves large, broad	J	
J	Leaves mostly dentate or denticulate, the lowest sometimes lobed.	**Toothed Blue Lettuce**	**1886**
J	Leaves deeply lobed or uppermost merely toothed	K	

K	Flower down (pappus) white	Florida Blue Lettuce	1887
K	Flower down (pappus) brown	Tall Blue Lettuce	1888
L	Flower pappus feather-like (plumose); leaves long, narrow; flowers large	Goatsbeard	1872
L	Flower pappus not plumose	M	
M	Seeds flattened	N	
M	Seeds cylindrical or prismatic	U	
N	Flowers large, few in number; plants low, not coarse	O	
N	Flowers small, very numerous; plants generally large and coarse	P	
O	Leaves spiny toothed, generally undivided; flowers 1″ or less	Spiny Sow Thistle	1877
O	Leaves spinulose, deeply lobed; flowers large, 2″, showy, like dandelions	Showy Sow Thistle	1875
O	Leaves soft, deeply lobed; flowers medium, 1″	Common Sow Thistle	1876
P	Heads few flowered (6–10); stem leaves clasping, bristly veined below; weed	Prickly Lettuce	1878–1879
P	Heads many flowered (12–20); coarse native plants	Q	
Q	Leaves long, narrow, unlobed	R	
Q	Leaves large, deeply lobed	S	
R	Leaves entire, auricled, thick; plant smooth	Entire Leaved Wild Lettuce	1881
R	Leaves denticulate to sinuate toothed, sagittate, pale beneath	Arrow Leaved Wild Lettuce	1882
S	Flowers reddish-yellow; leaves hirsute on both sides	Hairy Leaved Wild Lettuce	1883
S	Flowers yellow; plants and leaves smooth	T	
T	Leaves spinulose-denticulate	Western Wild Lettuce	1884
T	Leaves not spinulose-denticulate	Common Wild Lettuce	1880
U	Heads 1–2″ broad; leaves sessile, in part clasping, oblong, toothed	Canadian Hawkweed	1903
U	Heads less than 1″ broad	V	
V	Leaves mostly basal, one to three on slender stem	W	
V	Leaves clothing stem to inflorescence, often small above	X	
W	Pedicels and involucres smooth; leaves smooth or short pubescent	Purple Veined Hawkweed	1896
W	Pedicels and involucres glandular; leaves long, hairy	Green's Hawkweed	1897
X	Pubescence of abundant, long, brownish or whitish hairs	Bearded Hawkweed	1902
X	Pubescence short or wanting	Y	
Y	Leaves narrow, lance-oblong, acute; heads numerous, panicled	Panicled Hawkweed	1898
Y	Leaves elliptic or ovate, obtuse	Z	
Z	Stems glandular, hispid above	Rough Hawkweed	1900
Z	Stems soft, pubescent	a	
a	Inflorescence elongate; heads 15–20 flowered on slender, nearly bare pedicels	Gronovius' Hawkweed	1901
a	Inflorescence corymbose; heads 20–40 flowered on glandular, hispid pedicels	Maryland Hawkweed	1899

CHICORY SERIES

1867. CICHORIUM INTYBUS L.

CHICORY.

Roadsides, becoming more frequent year by year. Scattered throughout. Occasionally with pink or white flowers.

Exceedingly abundant along Milwaukee road.

1868. KRIGIA VIRGINICA (L.) Willd.

DWARF DANDELION.

Sand ridges southeast, common. Blooming very early.

1869. KRIGIA AMPLEXICAULIS Nutt. Cynthia virginica (L.) G. Don.

CYNTHIA. FALSE DANDELION.

Moist open soils, common. Very abundant along all swale margins west and south.

Very common on the Waukegan moorland.

1870. LEONTODON AUTUMNALIS L. Apargia autumnale (L.) Hoffm.

FALL DANDELION. LION'S TOOTH.

Found on the University campus, Evanston. (1891, Marcy) Long since exterminated, at least it has not been reported by others.

1871. TRAGOPOGON PORRIFOLIUS L.

SALSIFY. OYSTER-PLANT.

Roadsides, becoming common. Particularly a railroad plant. This plant is spreading everywhere along the grassy road margins.

1872. TRAGOPOGON PRATENSIS L.

GOAT'S BEARD. NOON FLOWER.

Common at Winnetka and occasional elsewhere.

On the Great Western, becoming abundant for miles.

1873. TARAXACUM OFFICINALE Weber. Leontodon Taraxacum L.

DANDELION.

Everywhere in open dry ground.

1874. TARAXACUM ERYTHROSPERMUM Andrz.

RED-SEEDED DANDELION.

Local, along north shore. Ravenswood. Irving Park.

1875. SONCHUS ARVENSIS L.

FIELD SOW THISTLE. TALL FALSE DANDELION. SHOWY SOW-THISTLE.

Common in vacant lots in Irving Park.

This station is rapidly seeding the vicinity. A pernicious weed, but a showy one.

Clarke, Ind. (Umbach)

1876. SONCHUS OLERACEUS L.

COMMON SOW THISTLE.

Common in vacant lots.

1877. SONCHUS ASPER (L.) Hill.

SPINY SOW THISTLE.

Vacant places, more common than the last.

1878. LACTUCA SCARIOLA L. L. virosa L.

PRICKLY LETTUCE.

Waste places, very common. Foliage used by foreign population of Chicago as a salad vegetable and gathered by the cart load early in the season.

1879. LACTUCA SCARIOLA INTEGRATA G. & G.

PRICKLY LETTUCE.

With the last but less common.
Orland and Naperville. (Umbach)

1880. LACTUCA CANADENSIS L.

WILD LETTUCE. TALL LETTUCE. WILD OPIUM.

Common in damp soils. Often eight to eleven feet in height, especially in woodlands.

The milky sap yields "Lactucarium," somewhat similar to opium.

1881. LACTUCA INTEGRIFOLIA Bigel. L. sagittifolia Ell. of Britton & Brown.

WILD LETTUCE.

Rich low thickets, Porter and Lake Cos., Ind.

1882. LACTUCA SAGITTIFOLIA Ell.

ARROW-LEAVED WILD LETTUCE.

Dry open places, frequent.
Britton & Brown combine the last two species.

1883. LACTUCA HIRSUTA Muhl.

HAIRY WILD LETTUCE.

Open sandy soil southeast, rare.

1884. LACTUCA LUDOVICIANA (Nutt.) Riddell.

WESTERN WILD LETTUCE.

Open ground. Beverly Hills. The Des Plaines Valley.
Flowers often purplish.

1885. LACTUCA PULCHELLA (Pursh.) DC.

SHOWY BLUE LETTUCE.

Along the railways, introduced. Frequent.

1886. LACTUCA VILLOSA Jacq.

HAIRY BLUE LETTUCE. TOOTHED BLUE LETTUCE.

Borders of woods, rare. Evanston. In the sand regions near Whiting, Ind. and eastward, occasional.

1887. LACTUCA FLORIDANA (L.) Gaertn.

BLUE LETTUCE.

Low rich thickets, occasional. Common southeast.
Beach near Waukegan. (Umbach)

1888. LACTUCA SPICATA (Lam.) Hitchc.

TALL BLUE LETTUCE.

Low grounds throughout, frequent.

1889. PRENANTHES CREPIDINEA Michx. Nabalus crepidinea (Michx.) DC.

CORYMBED RATTLESNAKE ROOT. GREAT WHITE LETTUCE.

Thickets of our northwestern margin, rare.

1890. PRENANTHES RACEMOSA Michx. Nabalus racemosus (Michx.) DC.

RATTLESNAKE ROOT. GLAUCOUS WHITE LETTUCE. SWAMP WHITE LETTUCE.

Marshes throughout, common.

1891. PRENANTHES ALBA L. Nabalus albus (L.) Hook.

WHITE LETTUCE. RATTLESNAKE ROOT.

Rich woods, common everywhere.

1892. PRENANTHES TRIFOLIATA (Cass.) Fernald. Nabalus trifoliatus Cass.

TALL RATTLESNAKE ROOT. GREAT WHITE LETTUCE.

Woods toward our eastern limits.

1893. PRENANTHES ALTISSIMA L. Nabalus altissimus (L.) Hook.

TALL WHITE LETTUCE. LION'S-FOOT.

Woods at Clarke, Ind., and eastward, frequent.

1894. PRENANTHES ASPERA Michx. Nabalus asper (Michx.) T. & G.

ROUGH WHITE LETTUCE.

Prairies and banks in dry soil, not common. Lisle. Wheatland.

1895. HIERACIUM AURANTIACUM L.

DEVIL'S PAINT-BRUSH. ORANGE HAWKWEED. RED DAISY.

Great patches in an open wood two miles north of Waukegan. This woodland is a brilliant sight in late June when the climax of bloom is at hand. Easily cultivated.

1896. HIERACIUM VENOSUM L.

POOR ROBIN'S PLANTAIN. PURPLE-VEINED HIERACIUM.

Sandy soil mostly southeast, infrequent. Miller and Berry Lake. (Bren)

1897. HIERACIUM GREENII P. & B.

GREEN'S HAWKWEED.

Dry open woods southeast, common.

1898. HIERACIUM PANICULATUM L.

PANICLED HAWKWEED.

Open woods southeast, common.

1899. HIERACIUM MARIANUM Willd.

MARYLAND HAWKWEED.

Open dry places near Gary and at Port Chester. (Umbach)

1900. HIERACIUM SCABRUM Michx.

ROUGH HAWKWEED.

Dry open places throughout, common.
Our abundant species.

1901. HIERACIUM GRONOVII L.

HAIRY HAWKWEED.

Sandy soils southeast, infrequent. (Babcock, Hill)

1902. HIERACIUM LONGIPILUM Torr.

LONG-BEARDED HAWKWEED.

Sandy soils, Miller and Dune Park, rare.

1903. HIERACIUM CANADENSE Michx.

CANADA HAWKWEED.

Borders of woods, common.

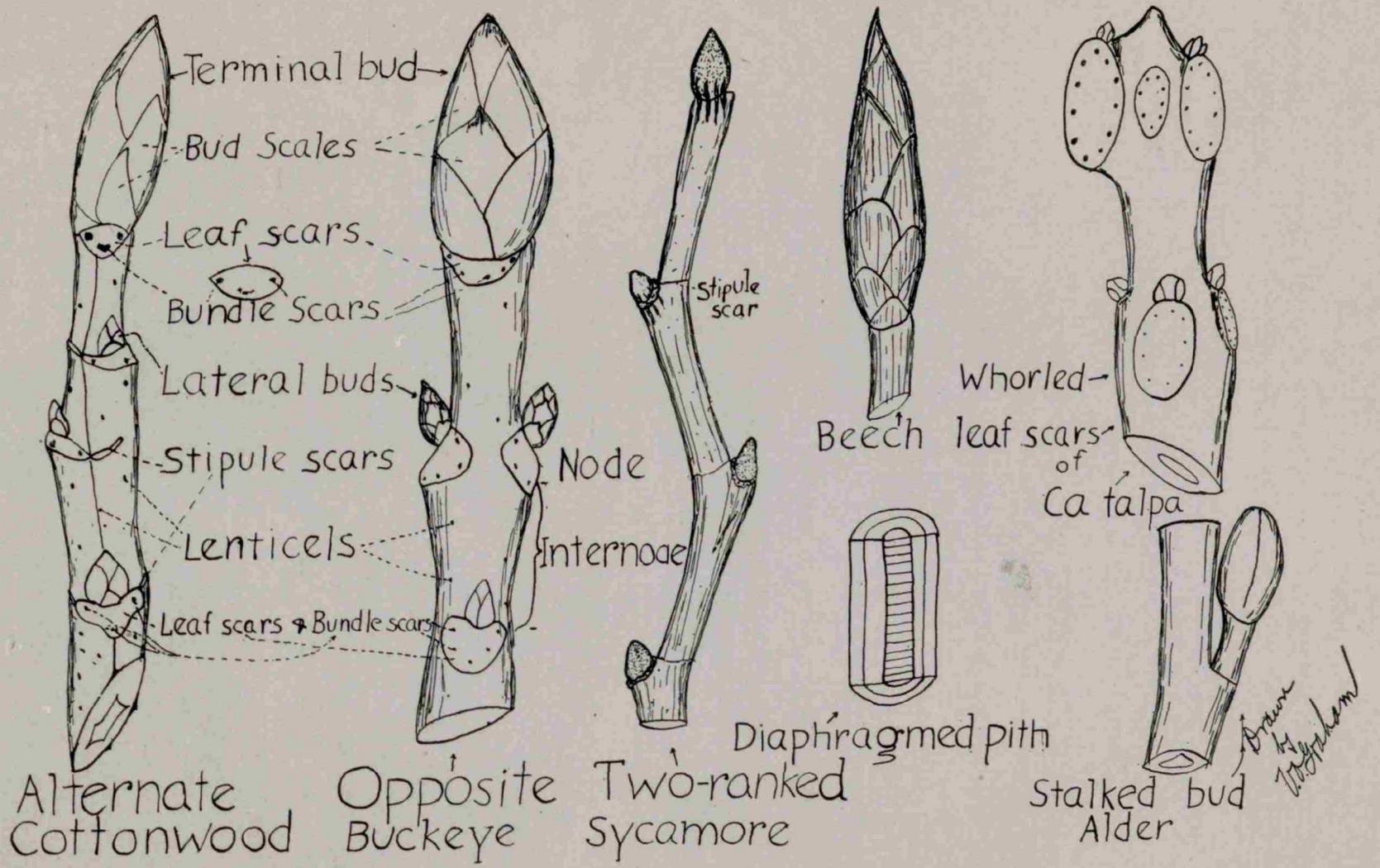


ILLUSTRATION OF TERMS USED IN THIS KEY

WINTER KEY TO TREES OF THE CHICAGO REGION

by

V. O. Graham, M.S., Principal of Burroughs School, Chicago.

1 Deciduous, i.e., leaves fall off each autumn leaving the twigs bare of leaves or with dead leaves 2

1 Evergreen, with green leaves in winter . . . 52

2 Leaf scars alternate, i.e., one at each node . . 3

2 Leaf scars often 3 or more at each node, round or oval; bundle scars several in a ring . . **Catalpa I**

I Fruit about ¼ inch thick; branches crooked . . . . . **C. bignonioides**

I Fruit about ½ inch thick; branches straight . . . . . **C. speciosa**

2 Leaf scars opposite, i.e., two at each node . . 46

3 Twigs or branches bearing thorns 4

3 No thorns present 11

4 Two small thorns present at node, one on each side of the upper part of the leaf scar or bud . I

I Buds covered by the leaf scar until they break through in the spring . . . **Robinia Pseudo-Acacia (Black Locust)**

I Buds evident, brownish red; twig bark with a strong aromatic taste . . . **Zanthoxylum americanum (Prickly Ash, Toothache Tree)**

4 Thorns average more than ¼ inch in length, not usually two at a node 5

5 Thorns from ¼ to 1 inch in length gradually lengthening by an ascending series from twig tip. The thorn occurs at the side of the axillary bud. Heart-wood orange . . . . . **Maclura pomifera (Mock Orange. Hedge Apple)**

5 Thorns situated differently. Not a regular ascending series 6

6 Thorns are branches as evidenced by leaf scars below them at their base 7

6 Thorns often 1 inch or more in length. Thorns often may have side branches 10

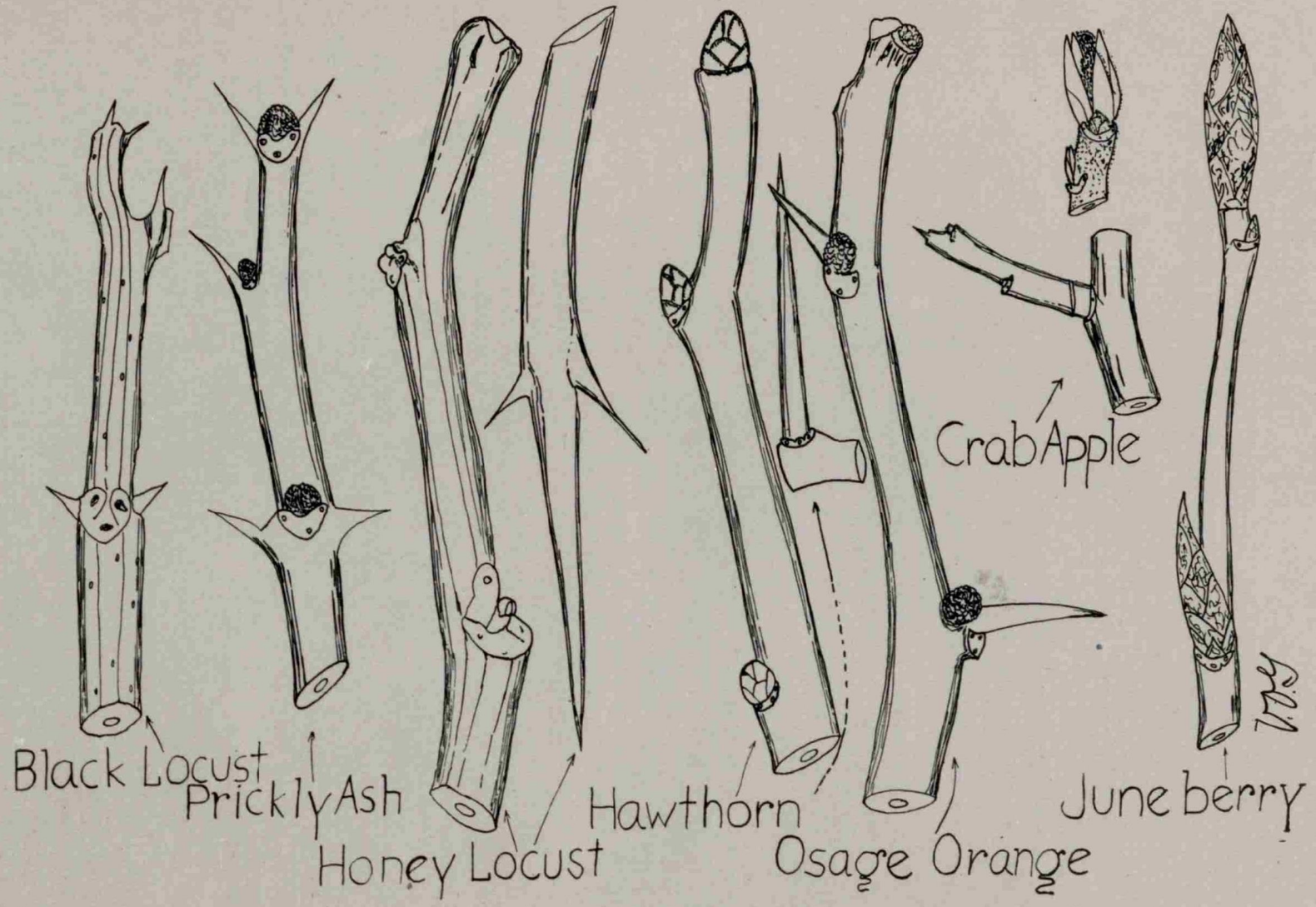
7 Leaf scars linear U shaped 8

7 Leaf scars broader 9

8 Buds woolly or scales margined with a different color . . . . . **Apple I**

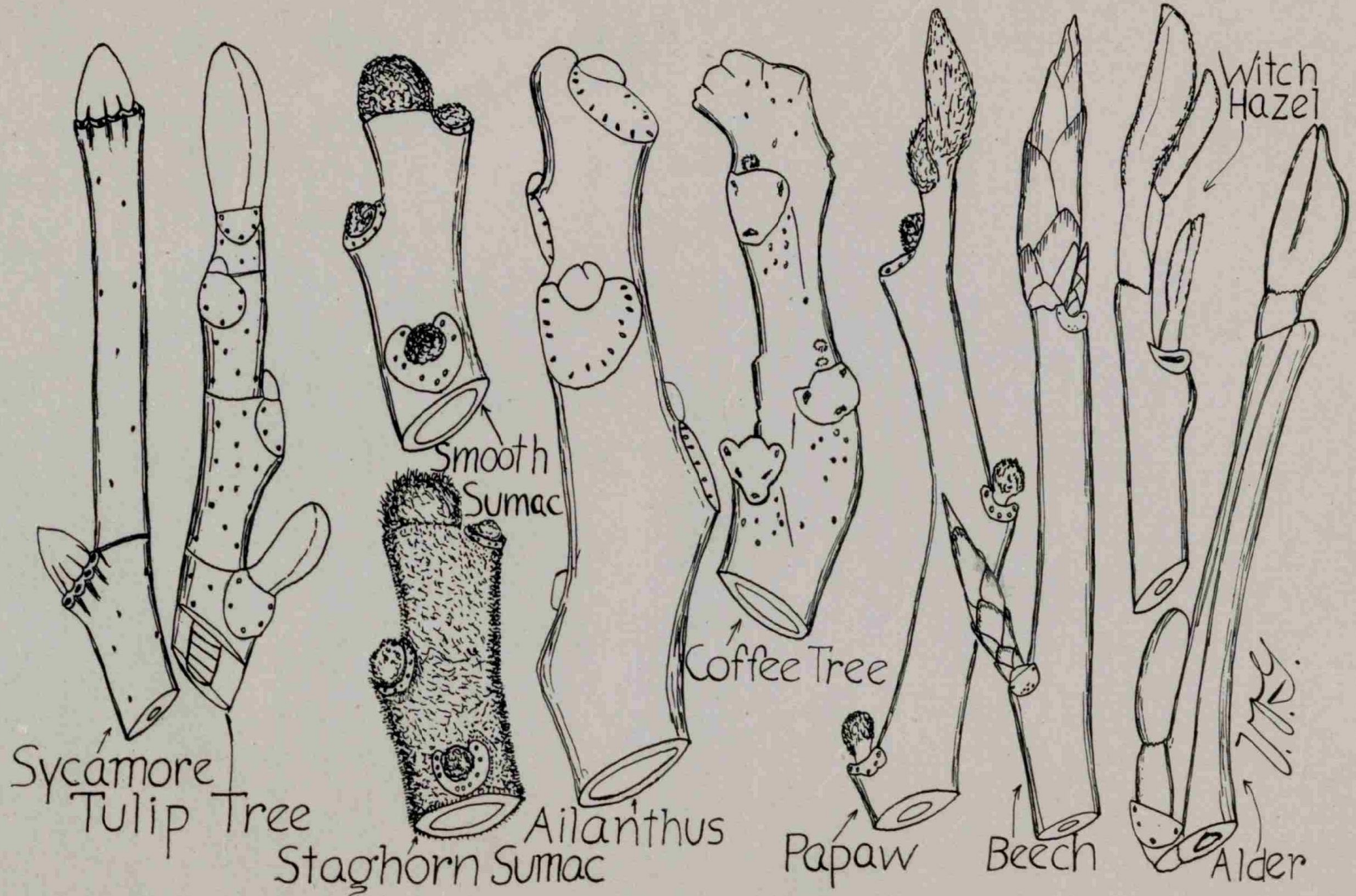
I Twigs quite glabrate . . . . . **Pyrus coronaria (Wild Crab Apple)**

I Twigs woolly or pubescent . . . . **Pyrus ioensis (Wild Crab Apple)**



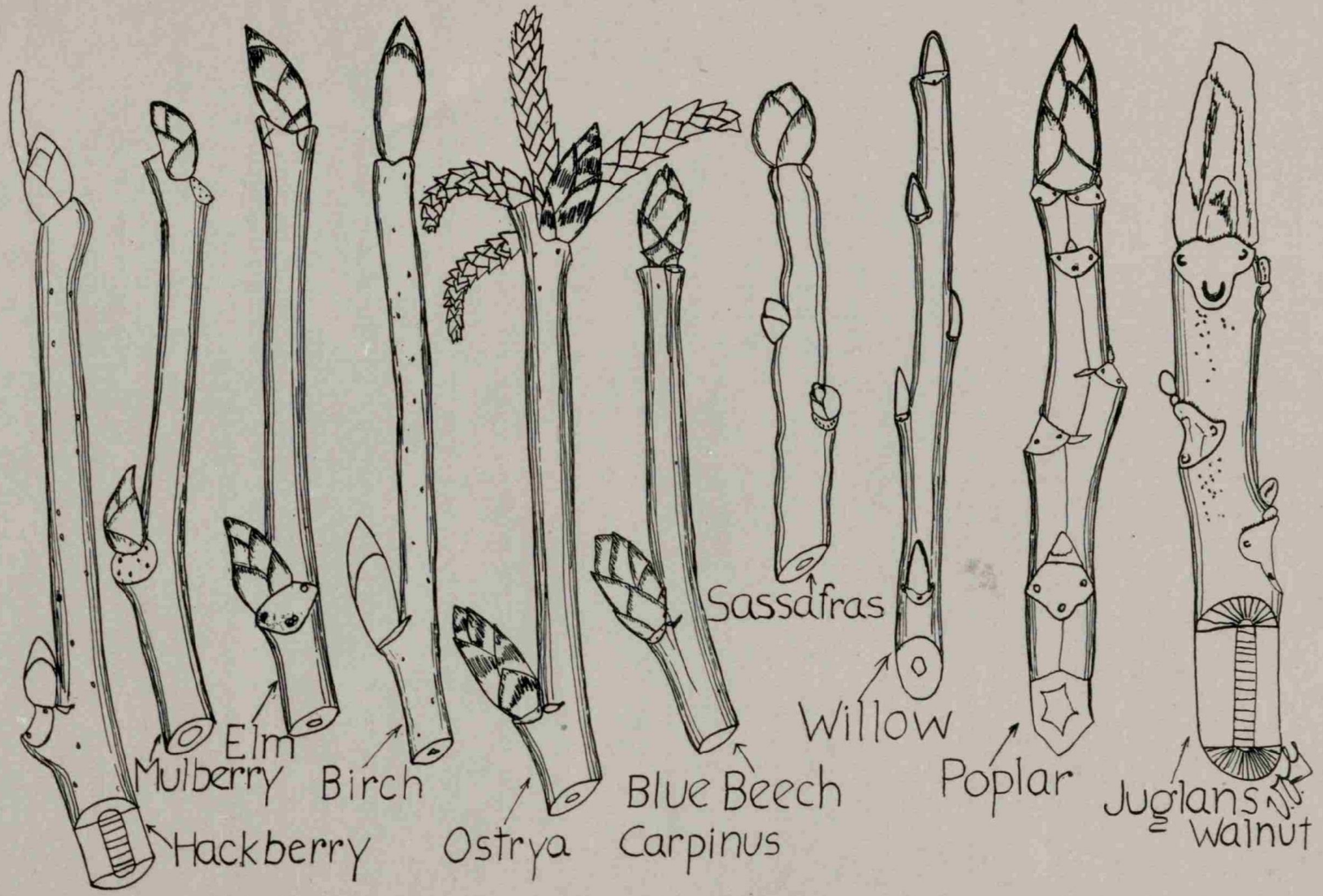
TREE TWIGS IN WINTER
(Slightly enlarged)

8 Buds not woolly or scales margined . . . . Pyrus communis (Pear)
9 Twigs and buds red-brown, shiny I
I Twigs 1/16 inch in diameter . . . . Prunus angustifolia var. Watsoni. (Watson's Plum. Sand Plum)
I Twigs about 1/8 inch or more . . . . Prunus americana (Wild Plum)
9 Buds black or gray, larger, twigs slender zigzag . Prunus nigra (Canada Plum)
10 Thorns on larger branches sometimes 3 inches long, branched. Twigs zigzag. Buds small, inconspicuous. Twig usually swollen below the node . . . . . Gleditsia triacanthos (Honey Locust)
10 Thorns more than an inch long, seldom branched; buds distinct, scaly, usually reddish brown . . . . . Crataegus (Hawthorns)
11 Line completely encircling the twig at each node 12
11 Line not completely encircling twig or none present 13
12 Leaf scar 3/5 encircling the bud U shaped . . Platanus occidentalis (Sycamore)
12 Leaf scars oval or circular; spicy bark; pith diaphragmed . . . . . Liriodendron tulipifera (Tulip Tree)
13 Leaf scars encircle the bud; twigs large, clubby . I
I Twigs smooth . . . . . Rhus glabra (Smooth Sumac)
I Twigs very hairy . . . . . Rhus typhina (Staghorn Sumac)
13 Leaf scars not encircling the bud 14
14 Leaf scars two ranked, i.e., first above third, third above fifth, etc. 15
14 Leaf scars more than two ranked 25
15 Stipular scars absent 16
15 Stipular scars present 17
16 Bark with fetid odor when bruised; terminal bud silky, naked of scales, somewhat elongated, often a little curving; pith solid but with firmer plates; bundle scars 5–7; leaf scars broad, crescent-shaped . . . . . Asimina triloba (Pawpaw)
16 Not fetid; terminal bud long pointed; leaf scar narrow; inner bud scales quite silky; bundle scars 3. A small tree . . . . . Amelanchier canadensis (Shad Bush) (Juneberry) (Service Berry)
17 Bark of tree trunk light gray, smooth, not separating off in paper like sheets 18
17 Bark of tree trunk rough or separating off in paper like sheets 19
18 Terminal bud often an inch long but scarcely 1/5 inch in diameter. Often a large tree with smooth light bark . . . . . Fagus grandifolia (Beech)
18 Buds smaller. Trunk of tree fluted lengthwise . Carpinus caroliniana (Blue Beech) (Water Beech)



TREE TWIGS IN WINTER
(Slightly enlarged)

19 Bud scales two, one of these large, making bud appear double; buds bright red when healthy . . . . . Tilia americana (Linden)
19 Bud scales more; buds not bright red . . . 20
20 Buds naked, stalked, yellow. Bush or small tree . . . . . Hamamelis virginiana (Witch Hazel)
20 Buds not stalked, with scales 21
21 Pith round, not diaphragmed 23
21 Pith flattened, angled or diaphragmed . . 22
22 Pith diaphragmed, greenish-white; twigs similar in appearance to the elm. Trunk bark scales stratified with curled edges . . . Celtis occidentalis (Hackberry)
22 Pith flattened or triangular . . . . . Betula I
I Twigs sometimes with long hairs. Bark of trunk peels off in papery sheets . . B. papyrifera (Canoe Birch)
I Twigs glabrous II
II Buds 1/5 to 1/4 inch long. Bark strips curling at tip . . . . . B. lutea (Yellow Birch)
II Buds about 3/10 inches long. Branches red-brown, spicy . . . . . B. lenta (Cherry Birch)
23 Bundle scars 3 24
23 Bundle scars 5 to many . . . . . Morus I
I Buds closely appressed, almost as broad as long . . . . . Morus alba (White Mulberry)
I Buds spreading somewhat, longer . . . Morus rubra (Red Mulberry)
24 Bark of trunk fine-furrowed, with thin scales; bud scales striate (under lens); twigs glandular, very slender . . . . . Ostrya virginiana
24 Bark of trunk in rough ridges; stipule scars unequal; leaf scars at one side of and below the bud; buds with 6 or more pairs of two ranked scales . . . . . Ulmus I
I Twigs hairy, dark, slippery when chewed . Ulmus fulva (Red Elm) (Slippery Elm)
I Twigs smooth or but slightly hairy . . II
II Twigs often with corky outgrowth . . Ulmus racemosa (Cork Elm) (Rock Elm)
II No corky ridges III
III Buds blackish-red, hairy . . . . . Ulmus campestris (English Elm)
III Buds brown . . . . . Ulmus americana (White Elm)
25 Buds stalked, three ranked; pith three sided . 26
25 Buds not stalked 27
26 Buds rather large, reddish, with 3 sub valvate scales. Bark not separating in papery sheets . . . . . Alnus incana (Alder)
26 Bark of trunk separating in papery sheets . . Betula (See No. 22)
27 Twigs bright green; bark aromatic; no stipule scars . . . . . Sassafras varifolium (Sassafras)
27 Twigs not bright green, not aromatic . . . 28
28 Buds clustered at the tip of twig, scaly . . 29
28 Buds not clustered at tip of twig 30



TREE TWIGS IN WINTER
(Slightly enlarged)

29 Pith of twig brown; bark with a bitter taste when chewed. Twigs quite slender . . . **Prunus pennsylvanica (Pin Cherry) (Wild Cherry)**

29 Pith not brown, usually star-shaped. Twigs very tough, many bundle scars, scattered . . **Quercus I**

I Leaves cut or lobed deeply, i.e., ½ inch or more in depth . . . . . **II**

I Leaves not deeply cut or lobed . . . **VII**

II Leaf lobes sharp pointed . . . . . **III**

II Leaf lobes rounded . . . . . **VI**

III Lower surface of leaves with pubescence in vein angles; terminal buds ¼ inch long, pubescent, grooved lengthwise; acorn cup-scales squarrose . . . . **Quercus velutina (Black Oak)**

III Lower surface not pubescent, buds not grooved . . . . . **IV**

IV Cup of acorn encloses ⅓ to ½ of nut. Tree provided with stubs of dead branches near ground; cup-scales appressed . . . . . **Q. ellipsoidalis (Hill's Oak)**

IV Cup enclosing only base of nut . . . **V**

V Nut about ½ inch long; leaves deeply lobed, lustrous above; lower branches drooping . . . . . **Q. palustris (Pin Oak) (Swamp Oak)**

V Nut about 1 inch long; leaves usually less deeply cut, upper surface dull; branches not drooping . . . . . **Q. rubra (Red Oak)**

VI Leaf lobed inward on sides nearly to midrib, near middle of leaf; acorn cup nearly covers nut; branches have corky rough ridges . . . . . **Q. macrocarpa (Bur Oak)**

VI Leaf not cut in middle, lobing more uniform; cup covers about ¼ of nut . . **Q. alba (White Oak)**

VII Leaves entire . . . . . **Q. imbricaria (Basket Oak)**

VII Margin of leaf large-sinuate, scarcely lobed . . . . . **Q. bicolor (Swamp White Oak)**

VII Margin of leaf toothed, large serrate . . **Q. Muhlenbergii (Chestnut Oak)**

30 Wart like dwarf branches present on the twigs. A swamp tree . . . . . **Larix laricina (Tamarack) (American Larch)**

30 No such dwarf branches present **31**

31 Twigs clubby; pith large, i.e., usually more than ¼ inch in diameter, when cut four inches from twig tip; pith salmon; leaf scars very large; buds broader than long **32**

31 Twigs not clubby; pith proportionately smaller **33**

32 Pith salmon colored; leaf scars irregularly heart-shaped with 3–5 bundle scars . . . **Gymnocladus dioica (Coffee Tree)**

32 Pith light to flesh colored; leaf scars heart-shaped; 7–19 bundle scars in a U shaped line . **Ailanthus glandulosa (Tree of Heaven)**

33 Leaf scars raised on a cushion. This cushion is bounded by stipule scars. About 6 exposed bud scales . . . . . Prunus I
I Twigs green or red, usually green on one side, red on other; buds hairy . . . P. persica (Peach)
I Twigs and buds different II
II End bud present . . . . . III (Cherry)
II End bud lacking . . . . . IV (Plum)
III Buds dull; scales rough . . . . . P. virginiana (Choke Cherry)
III Buds glossy . . . . . P. serotina (Black Cherry)
IV Buds partly covered by leaf cushion. Twigs about $^1/_{12}$ inch in diameter, red . P. angustifolia var. Watsoni (Watson's Sand Plum)
IV Buds protruding, gray-black; twigs heavier V
V Buds red-brown; twigs $\frac{1}{8}$ inch in diameter . . . . . P. americana (Wild Plum)
V Buds dark gray to black; terminal bud often $\frac{1}{4}$ inch long; twigs slender . . P. nigra (Canada Plum) (Black Plum)

33 Leaf scars on twig, not raised 34
34 Stipular scars present 35
34 Stipular scars absent 36
35 Twigs very slender; leaf scar a line completely bounding the part of the bud base which is not next to the twig. One sac-like scale covering the bud . . . . . Salix I
I Twigs golden shiny . . . . . S. alba var. Vitellina
I Twigs some other color II
II Buds $\frac{1}{4}$ inch or more in length . . . III
II Buds shorter V
III Buds much flattened into winged margins, often $\frac{3}{8}$ inch in length, almost black . . . . . S. discolor (Pussy Willow)
III Buds with different characters . . . IV
IV Buds about $\frac{1}{4}$ inch long, narrowly ovate, acute, light orange brown, lustrous . S. lucida (Shining Willow)
IV Buds not as above V
V Lateral bud gibbous, lustrous, dark brown, $\frac{1}{8}$ inch long. A large tree on poorly drained wet ground . . . . S. amygdaloides (Peach Willow)
V Lateral bud with both sides alike . . . VI
VI Twigs pubescent . . . . . S. rostrata
VI Twigs almost smooth VII
VII Trees slender, straight; twigs olive . . S. longifolia (Sand Bar Willow)
VII Large trees. Twigs snap off easily . . VIII
VIII Trunks mostly clustered; buds acute; along streams . . . . . S. nigra (Black Willow)
VIII Trunks single IX
IX Twigs somewhat velvety . . . . . S. alba (White Willow)
IX Twigs smooth . . . . . S. fragilis (Crack Willow)

35 Twigs more than ⅛ inch in diameter; two to several scales on bud; pith five sided; bundle scars three or in three groups . . . . . **Populus I**

I Terminal bud less than ¼ inch long, not resinous . . . . . **II**

I Terminal bud ½ to 1 inch long, sticky resinous . . . . . **IV**

II Buds and twigs white downy; green twigs . . . . . **P. alba (White Poplar)**

II Not conspicuously downy; twigs of another color . . . . . **III**

III Puberulent terminal bud about ⅛ inch in length; lateral buds widely divergent . . . . . **P. grandidentata (Great Toothed Poplar)**

III Terminal bud about ¼ inch long, smooth, lustrous; lateral buds appressed; twigs slender . . . . . **P. tremuloides (Trembling Poplar) (Quaking Aspen)**

IV Terminal bud ½ inch long; twigs often 5 angled, yellowish . . . . . **P. deltoides (Cottonwood)**

IV Terminal bud nearly 1 inch long; buds fragrant; twigs usually red-brown . . **V**

V Lower surface of leaves and leaf stems pubescent; leaves heart-shaped . . . **P. candicans (Balm of Gilead)**

V Leaves smooth, ovate-lanceolate . . . **P. balsamifera (Balsam Poplar)**

36 Bundle scars three **37**

36 Bundle scars five to many **44**

37 Bud scales two valvate; very small tree or bush . . . . . **Cornus alternifolia**

37 Without this combination of characters . . **38**

38 Bundle scars often horseshoe shaped; pith brownish, diaphragmed . . . . . **Juglans I**

I Upper part of leaf scar margined with hairs; pith dark brown, 5–10 diaphragms per centimeter . . . . . **Juglans cinerea (Butternut) (White Walnut)**

I Leaf scar not margined; pith light brown, 12–20 diaphragms per centimeter . . . . . **Juglans nigra (Black Walnut)**

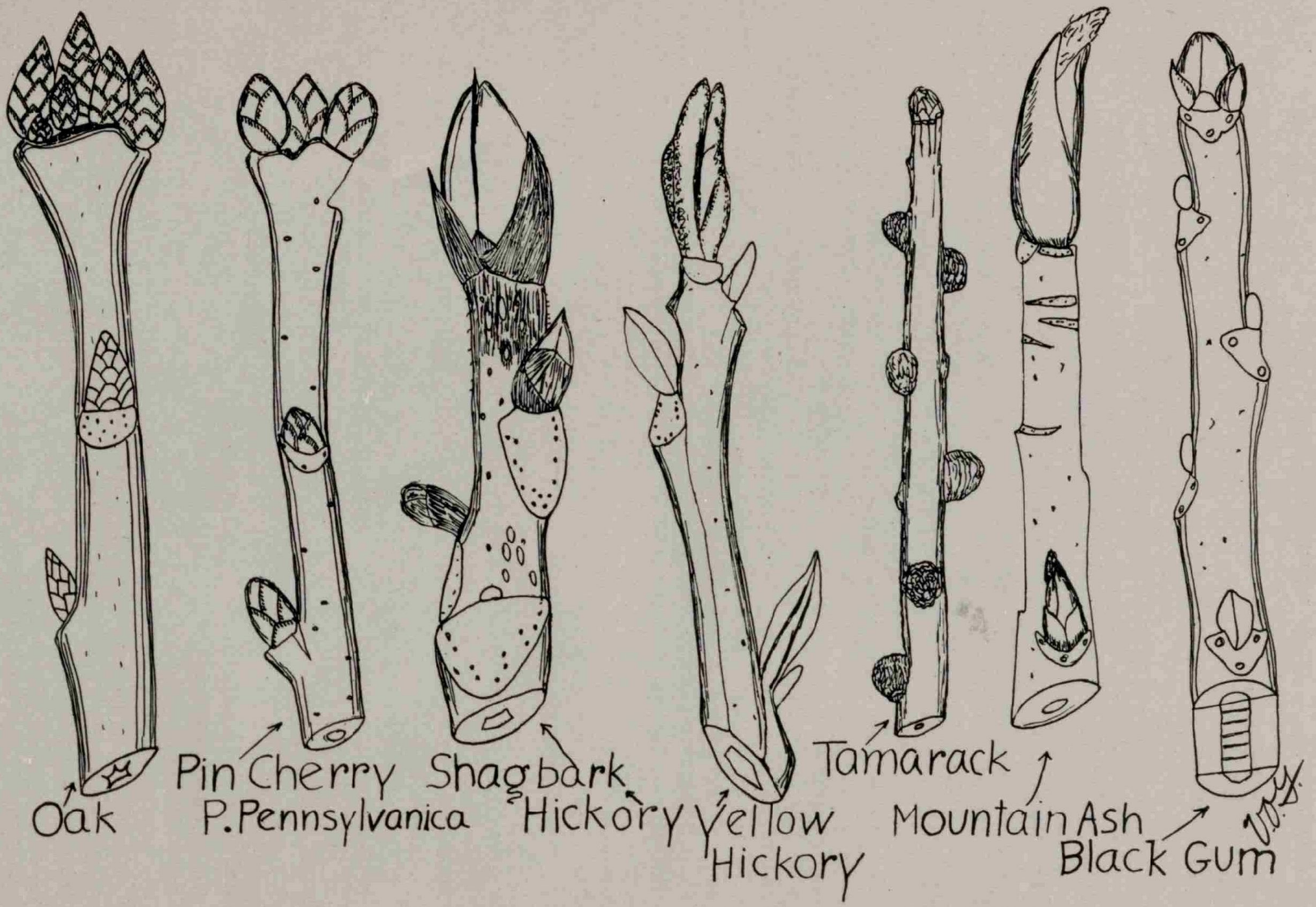
38 Bundle scars different; pith not brownish if diaphragmed then not excavated between the diaphragms **39**

39 Pith diaphragmed by firmer plates occurring in the continuous pith. Bundle scars very distinct. Twig resembles an apple twig. The lower branches droop . . . . . **Nyssa sylvatica (Black Gum)**

39 Pith not diaphragmed **40**

40 Buds usually covered by the leaf scar; bark of twig extremely bitter . . . . . **Ptelea trifoliata (Hop Tree) (Wafer Ash) (Quinine Bush)**

40 Buds distinct **41**



TREE TWIGS IN WINTER
(Slightly enlarged)

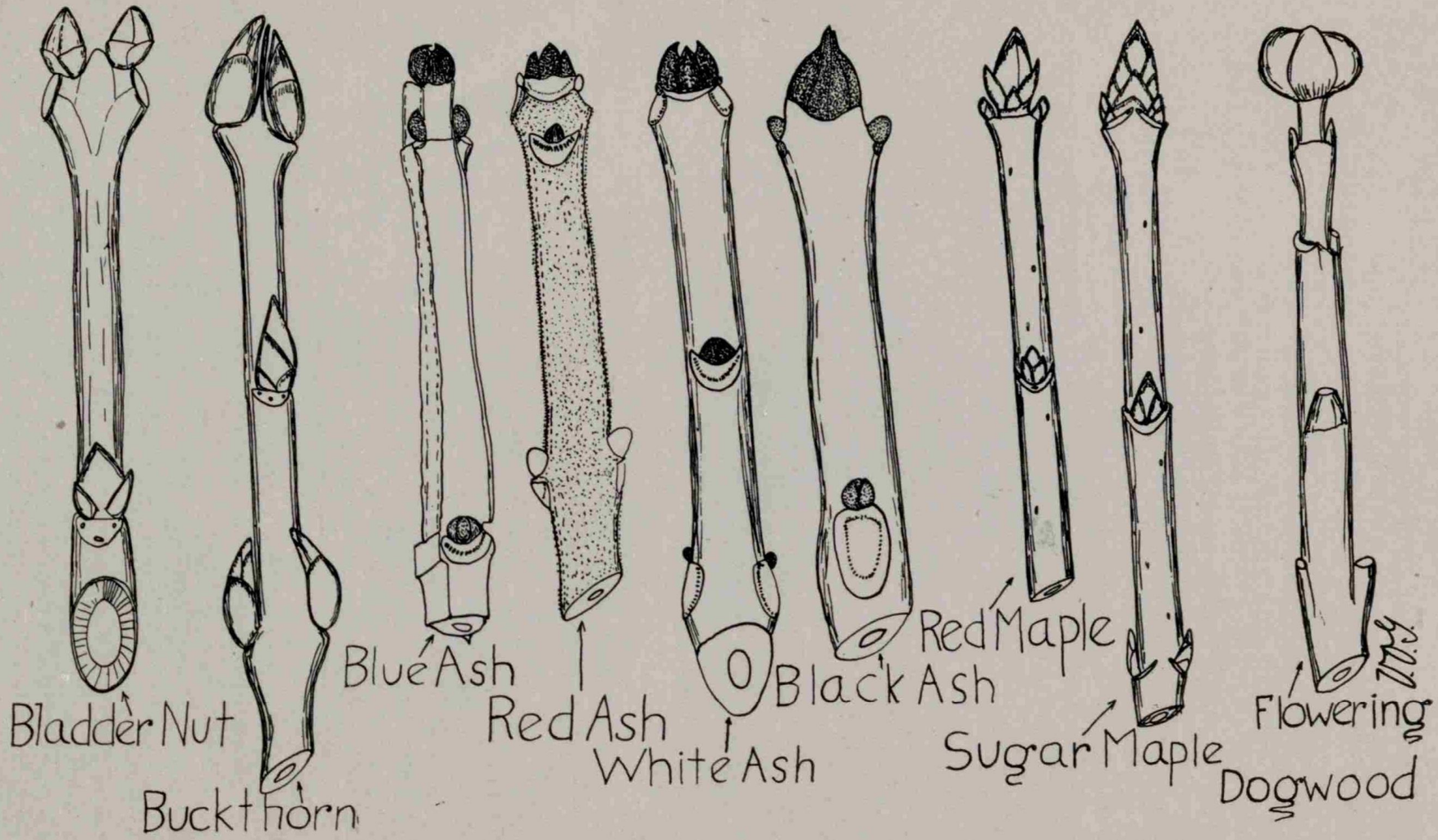
41 Terminal bud elongated to three or four times as long as broad, often curving 42
41 Terminal bud shorter 43
42 Terminal bud pointed; leaf scar narrow, constricted between the bundle scars; inner bud scales quite silky; twigs slender, 1/12 inch in diameter . . . . . Amelanchier canadensis
42 Terminal bud curved toward tip, quite large, gummy; twigs more than an 1/8 inch in diameter . . . . . Sorbus americana (Mountain Ash)

43 Bud scales pubescent or margined with another color . . . . . Pyrus Malus (Common Apple)
NOTE:—Should the crabapple trace here—See No. 8.
43 Bud scales not pubescent, not margined . . Pyrus communis (Pear)
44 Growing in swamps; crooked branches; usually just a shrub. Many bundle scars arranged in three patches; raised lenticels. About three bud scales on buds that are broader than long. Leaf scar broadly heart shaped . . . . Rhus vernix (Poison Sumac)
44 Without this combination of characters . . 45
45 Trees not over ten feet high; twigs puberulent; the numerous bundle scars arranged in a U shaped line . . . . . Rhus copallina (Upland or Mountain Sumac)

45 Often quite large trees with large terminal buds, tough strong twigs, many bundle scars. Leaf scar large, somewhat heart shaped . . . Hickory I
I Terminal bud yellow, appearing somewhat grooved lengthwise . . . . Carya cordiformis (Yellow Bud Hickory) (Pignut Hickory)
I Terminal bud gray to black II
II Terminal bud large, usually more than 1/2 inch long . . . . . Carya ovata (Shagbark Hickory)
II Terminal bud shorter III
III Twigs glabrous; buds greenish . . . Carya glabra (Pignut Hickory)
III Twigs long, hairy; buds brown . . . Carya microcarpa (Black Hickory)

46 Twig terminates with a pair of buds; no single terminal bud present; a self pruning tip of the branch sometimes occurs in place of the terminal bud 47
46 Twig terminates with a terminal bud . . . 48
47 Twig terminus often a spine scarcely longer than buds; twigs brown; buds with five or more scales . . . . . Rhamnus cathartica (Buckthorn)

47 Twig terminus not spine like; twigs often green to olive; buds with four blunt exposed scales; fruit a bladder-like three lobed structure about one inch long . . . . . Staphylea trifolia (Bladder Nut)



TREE TWIGS IN WINTER
(Slightly enlarged)

48 Leaf scars quite generally cover the lateral buds; the terminal bud stalked, the expanded part broader than high; bundle scars three . . **Cornus florida (Flowering Dogwood)**

48 Lateral buds evident; the terminal bud not raised on a stalk **49**

49 Bundle scars many in a crescent line, often so close together that they appear as one long curving line, like bundle scar **50**

49 Bundle scars separated into three or five, occasionally seven, if the scaly terminal bud is more than one half inch in length . . . **51**

50 Twigs rather sharply four angled . . . . **Fraxinus quadrangulata (Blue Ash)**

50 Twigs rounded . . . . . **I**

I Twigs hairy . . . . . **Fraxinus pennsylvanica (Red Ash)**

I Twigs glabrous . . . . . **II**

II Bark of tree trunk quite smooth, gray; leaf scars oval or straight at the top; buds often black; in swamps . . . **Fraxinus nigra (Black Ash)**

II Bark of tree trunk deeper fissured; darker; buds brown . . . . . **III**

III Leaf scars deeply concave at top, sometimes straight . . . . . **Fraxinus americana (White Ash)**

III Leaf scars straight at top, sometimes concave; the nodes less flattened than in white ash . . . . . **Fraxinus pennsylvanica var. lanceolata (Green Ash)**

51 Terminal bud at least ½ inch long; leaf scars about as high as wide; usually about 5 distinct bundle scars, sometimes more in three groups **Aesculus glabra (Buckeye)**

51 Terminal bud smaller; leaf scars more than twice as broad as high . . . . . **I**

I A line completely encircling the twig at each node; 4 or fewer outer bud scales **II**

I No such encircling line; 6 or more outer bud scales . . . . . **V**

II Opposite leaf scars meet each other in a point; buds woolly . . . . . **Acer Negundo (Box Elder)**

II Leaf scars connected by a transverse line . **III**

III Twigs and buds somewhat silky; the two valvate bud scales often separated laterally; twigs reddish . . . . . **Cornus asperifolia (Rough-leaved Dogwood)**

III Not silky; scales not valvate . . . . **IV**

IV Tips of branches conspicuously curving upward; broken twigs rank smelling; bud scales often apiculate; bark of full grown tree trunk forming flakes; a flood plain tree . . . . . **Acer saccharinum (Silver Maple) (River Maple)**

IV Tips of branches not conspicuously curving upward; broken twigs not rank smelling; bud scales with rounded tips; bark of full grown tree trunk rough ridged but not forming flakes; a swamp tree . . . . . **Acer rubrum (Red Maple)**

V Buds glabrous or pubescent at base only . **Acer saccharum (Sugar or Hard Maple)**

V' Buds densely pubescent at base as well as tips . . . . . **Acer saccharum var. Nigrum (Black Maple)**

52 Leaves five in each bract . . . . . **Pinus Strobus (White Pine)**

52 Leaves three or less in each cluster or not in bracts 53

53 Leaves two or three in each bract 54

53 Leaves occur singly or else are scale-like and grouped to form flat clusters 59

54 Leaves three in each bract, 2–5 inches long . **Pinus rigida (Pitch Pine)**

54 Leaves two in each bract 55

55 Cone scales unarmed 56

55 Cone scale armed with a sharp projection . . 58

56 Branches of tree salmon-flesh colored, smooth; leaves 1½ to 3 inches long; sheath about ⅛ inch long . . . . . **Pinus sylvestris (Scotch Pine)**

56 Branches different; sheath longer or else leaves much shorter 57

57 Leaves 4–7 inches long; sheath ⅓ to ¾ inches long; often planted . . . . . **Pinus resinosa (Red or Norway Pine)**

57 Leaves ½ to 1½ inches long . . . . . **Pinus Banksiana (Jack Pine)**

58 Spine of cone scale about ¼ inch long . . . **Pinus pungens (Table Mt. Pine)**

58 Spine of cone scale about $^1/_{12}$ inch long. . . **Pinus Banksiana (Jack Pine)**

59 Fruit cone-like, about ½ inch long; branches flat with overlapping scale-like leaves . . **Thuja occidentalis (Arbor Vitae) (White Cedar)**

59 Fruit berry-like, bluish; leaves sometimes awl-shaped and some are scale-like as in the preceding; each scale-like leaf with a resinous gland on back . . . . . **Juniperus virginiana**

GLOSSARY

Acuminate: Ending in a long, gradually narrowing, sharp point.
Acute: Ending in a sharp point, spoken of leaves particularly.
Akene: A one seeded dry fruit, resembling a seed, as in the sunflower or dandelion.
Alternate: Having but one leaf at a node on the stem.
Annual: Living but one season.
Apetalous: Without petals.
Appressed: Lying close to the stem, as the hairs.
Aquatic: Living in water, generally of some depth.
Ascending: Becoming erect from a reclined base, spoken particularly of stems.
Auricle: An enlargement at the base of a leaf, a basal lobe.
Awn: A long, stiff, bristly hair.
Axil: Between the stem and the leaf base or stalk, at and above the point of attachment of the leaf.
Axillary: Referring to the above.

Basal: At the lowest part of stem or leaf or other plant structure.
Beard: Copious hairs borne on some particular part, as the petal of a violet.
Bi: As a prefix, meaning twice, as "bipinnate," twice pinnate.
Bracts: Small leaves borne near the flower, particularly those of the involucre in Composites.
Broad: The width great as compared to the length.
Bulb: An underground portion, like an onion.

Calyx: The outer flower series, when such is present, outside of the stamens, made up of sepals.
Canescent: Gray with short light colored hairs.
Capsule: A dry fruit, usually small and rounded, containing many seeds.
Catkin, ament: An inflorescence like the willow or poplar.
Ciliate: With a marginal fringe of stiff hairs, as in leaves.
Cleistogamous: Having small uncolored concealed flowers at or below the ground surface, as in violets.
Coarse: Having large thick stems and leaves, like a burdock.
Compound: Having leaves divided into several or many separate parts (leaflets) borne on a common leaf stalk.
Cordate: Shaped like the conventional heart.
Corolla: The petals taken together, next outside of the stamens and within the calyx.
Corymb: Flowers borne in a more or less flat-topped cluster, usually of moderate or small size.
Crenate: Having rounded conspicuous teeth, as in a leaf.
Crenulate: Finely crenate.
Crown: Inner structures attached to the petals as in milkweeds.
Cuneate: Wedge shaped as a leaf base.
Cyme: A large and flattish inflorescence, dense in structure.
Cymose: Having cymes.

Deciduous: Dropping the leaves in the fall.
Decompound: Many times divided into numerous leaflets.
Decumbent: Reclining but with more or less erect tops.
Decurrent: With extensions of the leaf down the stem.
Dentate: With outwardly directed teeth, as in a leaf.
Denticulate: Minutely dentate.
Dichotomous: Forked.

Diffuse: Widely spreading, spoken of the form of growth of a plant.
Dioecious: Stamens and pistils in flowers on separate plants, as in willows.
Disk: The central portion of the composite head of flowers.
Dissected: Many times divided into small segments.
Divaricate: Widely spreading, spoken of leaves or branches on a stem.
Divided: With lobes cut to the center or base or mid-vein.

Entire: Without toothing or division, the leaf or flower part margin even.
Ephemeral: Lasting but a short time.
Epigynous: The ovary below the flower, as in a rose.
Evergreen: Lasting more than a year, as the leaves of pines.

Fascicle: A dense cluster.
Filiform: Thread-like.
Foliate: Referring to the divisions of a leaf, as 3, 5, 7 foliate.

Glabrate: Somewhat smooth.
Glabrous: Smooth.
Gland: Usually a hair with an enlarged end (gland).
Glaucous: Smooth and covered with a white bloom.

Habit: The general appearance of a plant, as a vine, tree, shrub.
Hastate: Arrow-shaped, with diverged basal lobes.
Head: The inflorescence of composites; also such dense clusters as clover.
Heart-shaped: Having two rounded basal lobes and a notch or sinus between.
Herbaceous: Having but little wood in the stem.
Hirsute: Having stiff coarse hairs.
Hispid: Having stiff bristles.
Hoary: Grayish white.
Hypogynous: The ovary above the flower, as in a tulip.

Immersed: Growing wholly under water.
Inferior: Below, as of the ovary beneath the flower.
Inflorescence: The arrangement of the flowers on the plant.
Involucre: A collection or circle of bracts, especially beneath the flowers of a composite head.
Irregular: With the flower parts of different shapes.

Joints: The divisions of a stem, as in the Scouring Rush.

Lance, Lanceolate: Long, narrow, pointed like a lance point.
Leaflet: A division of a compound leaf.
Linear: Long and narrow with parallel margins.
Lip: The two parts of an irregular mint or other flower; the third peculiar petal of an orchid.

Monoecious: The stamens and pistils in different flowers on the same plant, as in corn.

Node: That place on a stem where the leaf or leaves are attached.
Nocturnal: Blooming at night.

Ob: A prefix meaning inverted, as "obcordate," the heart-shaped notch at the end and not at the base.
Oblique: One side of base shorter than the other, as in a leaf of elm.
Oblong: Longer than broad, with nearly parallel sides, as in leaves.
Obtuse: Blunt at the end.
Opposite: Two leaves at a node.
Ovary: The lower enlarged part of the pistil, containing the young seeds.
Oval, ovate: Egg-shaped.

Palmate: Radiating from center of base of leaf, as lobes or veins.
Palmately: Having a palmate arrangement.
Panicle: An inflorescence like that of an oat or the corn tassel.
Paniculate: Having panicles.
Papilionaceous: Like the flower of a sweet pea in shape.

Pappus: The down of dandelion, thistle and other composite flowers.
Parallel: The veins, from end to end, almost equidistant.
Pedicel: The stalk of an individual flower in a flower cluster.
Peduncle: The main stalk of a flower cluster.
Peltate: The leaf stalk attached near the center of lower surface of leaf.
Perennial: Lasting many years.
Perfect: Having stamens and pistils in the same flower.
Perfoliate: With base of leaf surrounding stem.
Perianth: The sepals and petals together.
Petals: The inner expanded flower parts, just without the stamens.
Petiole: The leaf stalk.
Pinnate: Compound leaf, the leaflets on either side of the common stalk.
Pinnatifid: Deeply cleft in pinnate manner.
Pistil: The central flower part, having the ovary at base.
Plumose: Like a feather, generally spoken of pappus.
Puberulent: Minutely pubescent.
Pubescent: Hairy, with soft hair.
Punctate: Dotted with clear or dark spots.
Pungent: Having a biting taste.

Raceme: An inflorescence of a main axis and flowers on pedicels.
Radical: Leaves appearing to come from the root.
Rays: The outer flattened leaves of a composite head, as in the sunflower.
Receptacle: The summit of the flower stalk, bearing the flower parts.
Regular: The petals and sepals of the same shape for each series.
Retrorse: Hairs or bristles pointing downward.
Rhachis: The axis of a compound leaf.
Revolute: The margins incurved.
Rhizome: A horizontal underground stem as in Solomon's seal.
Ribbed: With heavy veins from the leaf blade attachment, curving toward leaf end.
Sagittate: Arrow-shaped with downward projecting basal lobes.
Salver-shaped: With a slender tube and flat expanded flower.
Scabrous: Very rough.
Scape: A peduncle arising from the ground.
Scapose: Having a scape.
Sepal: Division of the calyx.
Serrate: With sharp teeth pointing forward.
Serrulate: Finely serrate.
Sessile: Without leaf stalk (petiole).
Simple: In one piece.
Sinuate: The leaf outline strongly wavy.
Sinus: The cleft or notch between two adjacent lobes.
Spadix: The fleshy axis of a spike.
Spathe: A colored or green leaf, more or less enclosing a spadix, as in calla lily.
Spatulate: Club-shaped.
Spike: Flowers sessile and on a central axis, as in wheat.
Spine: A sharp, stiff, and slender projection.
Spinulose: Having tiny spines.
Sporangium: A case containing spores.
Spur: A hollow extension of some flower part, as in a columbine.
Stamen: The pollen bearing flower parts.
Stellate: Star-like.
Stipules: The pair of small structures at the base of a leaf-stalk.
Style: The slender middle portion of a pistil.
Succulent: Juicy, fleshy.
Superior: Above, as the ovary above the flower.

Terete: Having a circular cross-section.
Ternate: In threes as biternate, biternately compound.
Thallus: A plant body without distinction of stem and leaves.
Tomentose: Covered with short soft matted hairs.
Trifoliate: 3-foliate. A compound leaf with three leaflets, as in clover.
Truncate: Cut off abruptly or squarely.

Tuberculate: Covered with small hard projections.

Umbel: An inflorescence with the pedicels coming from a common point.

Verticillate: Disposed in a whorl.

Villous: Having long soft hairs.
Viscid: Sticky.

Whorl: Several leaves, for example, from the same node.
Wing: Thin, narrow membranes as on a stem.

INDEX

PAGE

Abutilon Theophrasti. 384
Acalypha virginica.... 373
ACANTHACEAE 471
ACERACEAE 378
Acer negundo..... 378
rubrum..... 378
saccharum..... 378
saccharinum..... 378
Acerates floridana.... 434
lanuginosa..... 434
viridiflora..... 434
Achillea millefolium... 514
Acnida tamariscina... 294
tuberculata..... 293
Acorus Calamus..... 213
Actaea alba..... 313
rubra..... 313
Actinea herbacea..... 514
Actinomeris alternifolia 512
Adder's Mouth..... 241
Adder's Tongue 52, 149, 221
Adiantum pedatum... 143
Adlumia fungosa..... 320
Aesculus glabra..... 379
Agastache nepetoides.. 447
scrophulariaefolia... 447
Agrimonia gryposepala 349
mollis..... 349
parviflora..... 349
rostellata..... 349
striata..... 349
Agrimony..... 349
Agropyron biflorum... 191
caninum..... 192
dasystachyum..... 192
repens..... 191
Smithii..... 191
tenerum..... 191
Agrostemma Githago.. 299
Agrostis alba..... 183
hyemalis..... 183
perennans..... 183
Ailanthus glandulosa.. 371
AIZOACEAE..... 297
Alder..... 277
Aletris farinosa..... 226
Alfalfa..... 361
Alisma plantago-aquatica..... 172
ALISMACEAE..... 171
Allium canadense..... 219
cernuum..... 219
tricoccum..... 219
Alnus incana..... 277
vulgaris..... 277
Alopecurus geniculatus 182
Alluvial valleys..... 51
Althaea rosea..... 384
Alum Root..... 337
Alyssum alyssoides... 325
AMARANTHACEAE 292
Amaranthus blitoides. 293
graecizans..... 293
hybridus..... 293
paniculatus..... 293
retroflexus..... 292
spinosus..... 293
AMARYLLIDACEAE 227
Amaryllis Family..... 227
Ambrosia artemisiifolia 507
bidentata..... 506
psilostachya..... 507

PAGE

Ambrosia trifida..... 506
Amelanchier.....341, 342
canadensis..... 342
oblongifolia..... 342
spicata..... 342
Ammannia coccinea... 400
Ammophila arenaria.. 184
Amorpha canescens... 361
fruticosa..... 361
Amphicarpa monoica.. 366
Pitcheri..... 366
ANACARDIACEAE . 375
Anagallis arvensis.... 424
Anaphalis margaritacea 505
Andropogon furcatus.. 173
scoparius..... 173
virginicus..... 173
Androsace occidentalis 423
Anemone canadensis 309, 311
caroliniana 308
cylindrica..... 311
patens..... 308
quinquefolia..... 311
virginiana..... 311
Anemonella thalictroides..... 308
Anethum graveolens.. 413
Angelica atropurpurea 413
villosa..... 413
ANGIOSPERMS 165
ANONACEAE..... 313
Antennaria fallax..... 505
neglecta..... 505
neodioica..... 505
plantaginifolia..... 505
Anthemis arvensis.... 516
Cotula..... 514
nobilis..... 516
Anthoxanthum odoratum..... 180
Anychya canadensis... 297
polygonoides..... 297
Apios tuberosa..... 366
Aplectrum hyemale... 241
APOCYNACEAE.... 430
Apocynum androsaemifolium..... 430
cannabinum..... 430
medium..... 430
Apple..... 340
of Peru..... 455
Aquatic Plants..... 84
AQUIFOLIACEAE... 376
Aquilegia canadensis.. 312
vulgaris..... 312
Arabis canadensis..... 332
dentata..... 331
Drummondi..... 331
hirsuta..... 331
laevigata..... 332
lyrata..... 331
virginica..... 331
ARACEAE..... 210
Aralia hispida..... 407
nudicaulis..... 407
racemosa..... 407
ARALIACEAE..... 407
Arbor Vitae..... 157
Arbutus, Trailing..... 420
Arctium Lappa..... 518
minus..... 518

PAGE

Arctostaphylos Uva-ursi..... 421
Arenaria lateriflora.... 297
patula..... 298
serpyllifolia..... 298
stricta..... 298
Arethusa bulbosa..238, 239
Argemone alba..... 318
intermedia..... 318
Arisaema Dracontium. 212
triphyllum.....211, 212
Aristida gracilis..... 180
intermedia..... 181
oligantha..... 181
purpurascens..... 181
tuberculosa..... 181
ARISTOLOCHIACEAE..... 283
Arrhenatherum elatius 185
Arrow-head.....171, 172
Arrow-wood.....477, 479
Artemisia annua..... 517
biennis..... 517
canadensis..... 516
caudata..... 516
kansana..... 517
longifolia..... 517
ludoviciana..... 517
procera..... 517
Artichoke..... 512
Arums.....210, 212
Asarum canadense.... 283
ASCLEPIADACEAE. 432
Asclepias amplexicaulis 432
incarnata..... 432
ovalifolia..... 433
phytolaccoides..... 433
purpurascens..... 432
quadrifolia..... 433
Sullivantii..... 432
syriaca..... 432
tuberosa.....432, 433
verticillata..... 433
Ash, Black..... 425
Blue..... 425
Green..... 425
Mountain..... 342
Prickly..... 370
Red..... 425
White..... 424
Asimina triloba..... 316
Asparagus officinalis.. 223
Aspen Poplar..... 272
Large-toothed..... 272
Asphodel, False..... 218
Aspidium cristatum... 146
Goldianum..... 146
marginale..... 146
noveboracense..... 146
simulatum..... 146
spinulosum.....146, 147
Thelypteris..... 145
Asplenium acrostichoides..... 145
angustifolium..... 145
Filix-femina..... 145
platyneuron..... 144
Associations, Plant... 27
Aster angustus..... 504
Annual..... 504
anomalus..... 499
Arrow-leaved..... 500

PAGE

Aster azureus..... 499
Bushy..... 501
cordifolius..... 500
Crooked-stemmed.. 502
Drummondii..... 500
dumosus..... 501
ericoides.....500, 501
Flax-leaved..... 503
Flat-top..... 503
Great-leaved..... 498
Heart-leaved..... 500
Heath..... 500
junceus..... 502
laevis..... 500
Long-leaved..... 502
lateriflorus..... 502
linariifolius..... 503
longifolius..... 502
macrophyllus..... 498
Many-leaved..... 500
Marsh white..... 502
multiflorus..... 501
novae-angliae..... 499
oblongifolius..... 499
paniculatus..... 502
Prairie..... 500
Purple..... 499
patens..... 499
polyphyllus..... 500
prenanthoides..... 502
ptarmicoides..... 504
puniceus..... 503
Red-stemmed..... 503
Rush..... 502
sagittifolius..... 500
salicifolius..... 502
Sand..... 504
sericeus..... 499
Shortii..... 499
Side-flowered..... 502
Silky..... 499
Sky-blue..... 499
Smooth..... 500
Strict..... 501
Tradescanti..... 502
turbinellus..... 500
umbellatus..... 503
undulatus..... 500
vimineus.....501, 502
Wavy..... 500
White, large..... 502
small..... 501
Willow..... 502
Astragalis canadensis.. 362
Atriplex argentea..... 292
patula..... 292
Avena fatua..... 185
sativa..... 185
Avens.....347, 348

Baby's Breath..... 301
Bachelor's Button.... 519
Balm of Gilead..... 272
BALSAMINACEAE.. 379
Baneberries...49, 312, 313
Baptisia bracteata.... 359
leucantha..... 359
tinctoria..... 359
Barbarea stricta..... 330
vulgaris..... 330
Barberries.....316, 317

PAGE

Barley..... 192
Bartonia virginica.... 428
Basil..... 450
Basswood....115, 383, 384
Beaches, Lake.xviii, 65, 105
Calumet...xviii, 65, 105
Glenwood
..... xvii, 50, 65, 105
Tolleston..xviii, 67, 105
Bean, wild..... 366
Bearberry.....119, 421
Beard-tongue.....460, 462
Bear's Foot.....49, 505
Beckmannia erucaeformis..... 185
Bed Straw.....474, 475
Bee Balm..... 449
Beech 23, 275, 276, 277, 278
Beech-drops..... 470
Beggar's Lice..... 439
Beggar-ticks, Swamp.. 513
Bellflower..... 481
Bellwort..... 219
Benzoin aestivale..... 318
BERBERIDACEAE.. 316
Berberis Thunbergii... 317
vulgaris..... 317
Bergamot..... 449
Berula erecta..... 411
Betony.....48, 467
Betula alba..... 277
lenta..... 275
lutea..... 277
pumila..... 277
BETULACEAE..... 275
Bidens aristosa..... 513
Beckii..... 514
comosa..... 513
connata..... 513
cernua..... 513
frondosa..... 513
involucrata..... 514
laevis..... 513
trichosperma..... 513
vulgata..... 513
BIGNONIACEAE... 471
Bindweed 289, 290, 435, 515
Birch, Canoe.....80, 277
Cherry..... 275
Dwarf or Bog..... 277
Paper..... 277
Yellow..... 277
Birthwort Family.... 283
Bishop's Cap..... 337
Bitter Nut..... 275
Bittersweet.....377, 453
Blackberry.....348, 349
Black-eyed Susan..... 508
Bladder Campion..300, 301
Pod..... 325
Bladdernuts..... 378
Bladderworts.....90, 469
Blazing Star..... 494
Blephilia ciliata..... 450
hirsuta..... 450
Bloodroot..... 318
Blowouts..... 115
Blue Devil..... 442
Hearts..... 466
Island.....xix, 64
Bluebell.....441, 481
Blueberries..... 421
Blue-eyed Mary..... 459
Bluets..... 476
Blue-weed..... 442
Boehmeria cylindrica.. 282
Boltonia asteroides.... 498
Boneset..... 494
Borage Family..... 439
BORAGINACEAE... 439

PAGE

Botrychium obliquum. 149
ternatum..... 151
virginianum..... 151
Bouncing Bet.....301, 302
Bouteloua curtipendula 186
Brachyelytrum erectum 182
Bracken..... 144
Brakes..... 144
Brasenia Schreberi.... 304
Brassica alba..... 327
arvensis..... 327
campestris..... 328
juncea..... 327
Napus..... 327
nigra..... 327
Rapa..... 327
Brauneria pallida..... 508
purpurea..... 508
Bromus ciliatus..... 190
commutatus..... 190
hordeaceus..... 190
Kalmii..... 190
inermis..... 190
purgans..... 190
racemosus..... 190
secalinus..... 190
tectorum..... 190
villosus..... 191
Broom-rape..470, 471, 472
Buchnera americana.. 466
Buckbean.....429, 430
Buckeye..... 379
Buckthorns.....379, 381
Buckwheat...286, 289, 290
Buffalo Berry..... 400
Bur..... 453
Bugle-weed..... 451
Bugseed..... 292
Bulrush..... 198
Bunch Berry..... 415
Burdock..... 518
Burmannia..... 231
BURMANNIACEAE. 231
Burning Bush..... 377
Bur-reeds..... 166
Butter and Eggs..... 459
Buttercups..... 307
Butterfly-weed....432, 433
Butternut..... 274
Buttonbush..... 476
Buttonweed..... 475
Buttonwood..... 339

Cacalia atriplicifolia.. 518
reniformis..... 517
suaveolens..... 517
tuberosa..... 518
CACTACEAE..... 399
Cactus Family..... 399
Cakile edentula..... 327
Calamus..... 213
Calamagrostis canadensis..... 184
inexpansa..... 184
Calamint..... 450
Calamovilfa longifolia
.....136, 184
Callirhoe involucrata.. 385
triangulata..... 385
CALLITRICHACEAE 375
Callitriche deflexa.... 375
heterophylla..... 375
palustris..... 375
Calopogon pulchellus.. 239
Caltha palustris...310, 311
Caltrops..... 370
Calumet Beach xviii, 65, 105
River, Grand 102, 107, 133
Little.....67, 107, 133

PAGE

Camassia esculenta... 223
Camelina microcarpa.. 326
sativa..... 326
Campanula americana. 481
aparinoides..... 481
rotundifolia..... 481
uliginosa..... 481
CAMPANULACEAE. 481
Campions....299, 300, 301
Camptosorus rhizophyllos..... 145
Cancer-root..... 470
Cannabis sativa..... 281
Caper Family..... 332
CAPPARIDACEAE.. 332
CAPRIFOLIACEAE. 476
Capsella Bursa-pastoris 326
Caraway..... 411
Cardamine bulbosa... 330
Douglasii..... 330
hirsuta..... 331
parviflora..... 331
pennsylvanica..... 331
pratensis..... 331
Cardinal-flower..... 481
Carex.....22, 32, 201
alata..... 201
alopecoidea..... 203
aquatilis..... 204
aurea..... 204
Bebbii..... 202
Bicknellii..... 201
bromoides..... 202
brunnescens..... 202
canescens..... 202
Careyana..... 207
cephaloidea..... 203
cephalophora..... 203
chordorrhiza..... 204
comosa..... 209
communis..... 205
conjuncta..... 204
conoidea..... 208
Crawei..... 208
crinita..... 204
cristata..... 201
crus-corvi..... 204
Davisii..... 205
debilis..... 208
decomposita..... 204
diandra..... 204
digitalis..... 207
eburnea..... 207
festucacea..... 202
filiformis..... 209
flava..... 208
foenea..... 202
folliculata..... 210
gracillima..... 205
granularis..... 208
gravida..... 203
Grayii..... 210
grisea..... 208
Hitchcockiana..... 207
hormathodes..... 201
hystericina..... 209
intumescens..... 210
Jamesii..... 205
lanuginosa..... 209
laxiflora..... 207
leptalea..... 205
limosa..... 207
livida..... 206
longirostris..... 208
lupuliformis..... 209
lupulina..... 209
lurida..... 209
mirabilis..... 201
Muhlenbergii..... 203
muskingumensis.... 201

PAGE

Carex Oederi..... 208
oligocarpa..... 208
oligosperma..... 209
pallescens..... 207
pauciflora..... 205
paupercula..... 207
pennsylvanica..... 206
plantaginea..... 207
polygama..... 205
pubescens..... 206
retroflexa..... 203
retrorsa..... 209
Richardsoni..... 207
riparia..... 209
rosea..... 203
rostrata..... 210
Sartwellii..... 204
scabrata..... 208
scirpoides..... 202
scoparia..... 201
seorsa..... 202
setacea..... 203
Shortiana..... 205
siccata..... 201
sparganioides..... 203
squarrosa..... 209
stellulata..... 202
stipata..... 204
straminea..... 201
stricta..... 204
suberecta..... 202
tenella..... 203
tetanica..... 206
tribuloides..... 201
triceps..... 205
trichocarpa..... 209
trisperma..... 203
Tuckermani..... 210
umbellata..... 205
vaginata..... 207
varia..... 206
virescens..... 205
vulpinoidea..... 203
Carpet Weed..... 297
Carpinus caroliniana.. 275
Carrion-flower..... 226
Carrot Family..... 410
wild..... 415
Carum Carvi..... 411
Carya cordiformis.... 275
glabra..... 274
microcarpa..... 275
ovata..... 274
CARYOPHYLLACEAE..... 297
Cashew Family..... 375
Cassia Chamaecrista
.....357, 358
marilandica..... 359
nictitans..... 359
occidentalis..... 357
Tora..... 357
Castalia odorata..... 304
tuberosa..... 304
Castilleja coccinea.... 466
sessiliflora..... 466
Catalpa bignonioides.. 471
speciosa..... 471
Catchfly..... 299
Catnip..... 447
Cat's-foot..... 505
Cat-tail Family..... 165
Caulophyllum thalictroides..... 317
Ceanothus americanus. 381
ovatus..... 381
Cedar, Red.....80, 158
White.....80, 157
Celandine..... 318
CELASTRACEAE... 377

PAGE

Celastrus scandens.... 377
Celtis occidentalis.... 281
Cenchrus carolinianus. 179
Centaurea Cyanus.... 519
Jacea..... 519
Moschata..... 519
Centaurium pulchellum 427
Centaury..... 427
Cephalanthus occidentalis..... 476
Cerastium arvense.... 298
nutans..... 299
vulgatum..... 299
CERATOPHYLLACEAE..... 303
Ceratophyllum demersum..... 303
Cercis canadensis..... 359
Chaerophyllum procumbens..... 411
Chamaecyce glyptosperma..... 373
humistrata..... 373
maculata..... 373
polygonifolia..... 373
Preslii..... 373
Rafinesquii..... 373
serpens..... 373
serpyllifolia..... 373
Chamaedaphne calyculata..... 420
Chamomiles..... 516
Charlock..... 327
Chelidonium majus... 318
Cheeses..... 384
Chelone glabra....460, 461
CHENOPODIACEAE 290
Chenopodium album.. 291
ambrosioides..... 290
anthelminticum.... 290
Bonus-Henricus.... 291
Boscianum..... 291
Botrys..... 290
capitatum..... 291
glaucum..... 291
hybridum..... 291
leptophyllum..... 291
murale..... 291
urbicum..... 291
Cherry, Bird..... 351
Choke..... 351
Ground..... 454
Pin..... 351
Red..... 351
Sand..... 351
Sour..... 351
Wild Black..... 351
Chervil..... 411
Chesses..... 190
Chestnut sedge..... 196
Chicago Area..... xv
Glacial Lake..... xvii
Plain.....63, 67
River.....xv, 33
Chickweeds.....298, 299
Chicory..... 522
Chimaphila maculata. 418
umbellata..... 418
Chiming Bells..... 441
Chokeberries.....340, 342
Chrysanthemum Balsamita..... 516
Leucanthemum..... 516
Chrysosplenium americanum..... 337
Chufus..... 194
Cichorium Intybus... 522
Cicuta bulbifera..... 411
maculata..... 411
Cinna arundinacea.... 184

PAGE

Cinna latifolia..... 184
Cinquefoils.....346, 347
Circaea intermedia.... 404
lutetiana..... 404
Cirsium altissimum... 519
arvense..... 519
discolor..... 519
Hillii..... 519
lanceolatum..... 518
muticum..... 519
Pitcheri..... 518
pumilum..... 519
CISTACEAE..... 389
Cladium mariscoides.. 200
Cladothrix lanuginosa. 293
Clammy Weed..... 332
Claytonia caroliniana. 303
virginica..... 301
Clearweed..... 282
Cleavers..... 474
Clematis Pitcheri..... 311
virginiana..... 311
Cleome serrulata..... 332
spinosa..... 332
Clintonia Borealis.... 223
Clovers 51, 360, 361, 362, 364
Club Mosses..152, 153, 154
Cockle, Corn..... 299
Cockleburs..... 507
Coffee Senna..... 357
Coffee-tree..... 357
Cohosh, Blue..... 317
Colic-root..... 226
Collinsia verna..... 459
Collinsonia canadensis. 451
Columbines..... 312
Columbo.....427, 428
Collomia..... 438
Comandra Richardsiana..... 283
umbellata..... 283
Comfrey, Wild..... 439
Commelina communis. 215
virginica..... 215
COMMELINACEAE . 215
Compass Plants..... 506
COMPOSITAE..... 493
Cone-flowers..508, 509, 510
Conioselinum chinense. 413
Conium maculatum... 411
Conopholis americana. 470
Conservation of the Flora.....xx, xxi, xxii
Conringia orientalis... 328
Convallaria majalis... 224
CONVOLVULACEAE 434
Convolvulus arvensis.. 435
sepium..... 435
spithamaeus..... 435
Coptis trifolia..... 311
Coral Roots..... 241
Coral-berry..... 477
Corallorrhiza maculata 241
trifida..... 241
Coreopsis grandiflora.. 512
lanceolata.....358, 512
major..... 512
palmata..... 512
tinctoria..... 512
tripteris..... 513
Corispermum hyssopifolium..... 292
CORNACEAE..... 415
Cornels.....415, 417
Corn-flower..... 519
Cornus alternifolia.... 417
Amomum..... 415
asperifolia..... 417
Baileyi..... 415
canadensis..... 415

PAGE

Cornus circinata..... 415
florida..... 415
paniculata..... 417
stolonifera..... 415
Corydalis aurea..... 321
micrantha..... 321
sempervirens..... 320
Corylus americana.... 275
Costmary..... 516
Cotton-wood..... 273
Cowbane..... 413
Cow-herb..... 301
Cowslip..... 311
Virginia..... 441
Crab Apples..... 340
Cranberries..... 422
High-bush..... 477
Cranesbill..... 369
CRASSULACEAE... 336
Crataegus..... 342
apiomorpha..... 346
arduennae..... 346
assurgens..... 345
corusca..... 345
Crus-galli..... 343
delecta..... 345
depilis..... 345
Gaultii..... 346
Hillii..... 345
lucorum..... 343
macracantha..... 345
Margaretta..... 343
mollis..... 345
Oxycantha..... 343
paucispina..... 345
peoriensis..... 346
Pringlei..... 343
pruinosa.....343, 344
punctata..... 343
rotundifolia..... 343
sera..... 345
sertata..... 345
tomentosa..... 343
vegeta..... 345
Cress, Bank..... 332
Bitter.....330, 331
Drummond's..... 331
Field..... 326
Garden..... 326
Lake..... 330
Marsh..... 329
Mouse-ear..... 329
Penny..... 326
Rock..... 331
Spring..... 330
Toothed..... 331
Violet..... 330
Water..... 329
Winter..... 330
Yellow.....329, 330
Crotalaria sagittalis... 359
Croton capitatus..... 372
glandulosus..... 372
monanthogynus..... 372
Crowfoots....305, 306, 307
Crowsfoot..... 186
CRUCIFERAE..... 325
Cryptogramma Stelleri 144
Cryptotaenia canadensis..... 412
Cuckoo Flower..... 331
Cucumbers.....480, 481
Cucumber-root..... 224
Cucurbita foetidissima. 480
CUCURBITACEAE.. 480
Cudweed..... 505
Culver's Physic...463, 464
Cup Plant..... 506
Cuphea petiolata..... 401
Currants..... 338

PAGE

Cuscuta arvensis..... 437
Cephalanthi..... 437
Coryli..... 437
glomerata..... 437
Gronovii..... 437
obtusiflora..... 437
Custard Apple Family. 313
Cycloloma atriplicifolium..... 290
Cynanchum nigrum... 434
Cynodon Dactylon... 185
Cynoglossum officinale 439
virginianum..... 439
Cynthia..... 522
CYPERACEAE..... 193
Cyperus acuminatus.. 194
aristatus..... 193
diandrus..... 193
Engelmanni..... 194
erythrorhizos..... 194
esculentus..... 194
ferax..... 194
filiculmis..... 194
Houghtonii..... 194
ovularis..... 194
rivularis..... 193
Schweinitzii..... 193
strigosus..... 194
Cypripedium acaule... 234
candidum.....233, 234
hirsutum.....232, 234
parviflorum..... 231
Cystopteris bulbifera.. 147
fragilis..... 147

Dactylis glomerata... 187
Daisies..... 504
Dalea alopecuroides... 361
Dandelions..... 522
Danthonia spicata.... 185
Datura Stramonium.. 455
Tatula..... 455
Daucus Carota..... 415
Day-flowers..... 215
Dead River.....5, 9, 11
Decodon verticillatus. 401
Deep River..... 70
Delphinium Ajacis.... 313
Consolida..... 312
Dentaria laciniata.... 330
Desmanthus illinoensis 357
Desmodium bracteosum..... 363
canadense..... 363
canescens..... 363
Dillenii..... 363
grandiflorum..... 362
illinoense..... 363
marilandicum..... 363
nudiflorum..... 362
obtusum..... 364
paniculatum..... 363
rigidum..... 364
sessilifolium..... 363
viridiflorum..... 363
Des Plaines Drainage. 39
Devil's Paint-brush... 525
Dewberry..... 349
Dianthera americana.. 471
Diarrhena diandra.... 187
Dicentra canadensis... 320
Cucullaria..... 320
Dichrophyllum marginatum..... 374
DICOTYLEDONS... 267
Key to Families.... 242
Didiplis diandra..... 400
Diervilla Lonicera.... 476
Digitaria humifusa.... 174

PAGE

Digitaria sanguinalis. 174
Dill. 413
Diodia teres. 475
Dioscorea villosa. 227
DIOSCOREACEAE. 227
Diplotaxis muralis. 328
DIPSACACEAE. 480
Dipsacus sylvestris. 480
Dirca palustris. 400
Docks. 286, 287
Dockmackie. 477
Dodder. 437
Dodecatheon Meadia. 424
Dog Fennel. 514
Dogbane. 430
Dogwood, Alternate-leaved. 417
Flowering. 415, 416
Purple. 417
Red-osier. 415
Round-leaved. 415
Sand-dune. 415
Draba caroliniana. 325
verna. 325
Dragon, Green. 212
Head. 447
Drift Deposits. 42
Drosera longifolia. 335
rotundifolia. 335
DROSERACEAE. 335
Duck's-meat. 213
Duckweeds. 213
Dulichium arundinaceum. 195
Dune Forest. 119
Dune Formation. 115, 117
Dune Park, Indiana 109, 117
Ridges. 117
Dunes, Established. 117
Moving. 115
Region. 101, 103, 110
Shore. 108, 113
Du Page River. 38, 51, 71
Dutchman's Breeches. 319, 320
Dyssodia papposa. 514

Echinochloa crusgalli. 178
Walteri. 178
Echinocystis lobata. 481
Echium vulgare. 442
Eclipta alba. 507
Edgebrook. 31
Eel Grass. 172
ELAEAGNACEAE. 400
ELATINACEAE. 389
Elatine americana. 389
Elder. 479
Box. 378
Marsh. 506
Red. 479
Elderberry. 479
Elecampane. 505
Eleocharis acicularis. 196
acuminata. 196
capitata. 195
Engelmannii. 196
intermedia. 196
interstincta. 195
melanocarpa. 196
obtusa. 195
olivacea. 195
palustris. 196
quadrangulata. 195
Robbinsii. 195
tenuis. 196
Elevations. 64
Eleusine indica. 186
Ellisia Nyctelea. 439
Elm, Cork. 79, 281
English. 280
Red. 79, 280
Slippery. 280
White. 281
Elodea canadensis. 172
Elymus arenarius. 192
brachystachys. 193
canadensis. 192
robustus. 193
striatus. 193
virginicus. 192
Epifagus virginiana. 470
Epigaea repens. 420
Epilobium adenocaulon 402
angustifolium. 402
coloratum. 402
densum. 402
molle. 402
palustre. 402
Epipactis pubescens. 241
EQUISETACEAE. 151
Equisetum arvense. 151
fluviatile. 151
hyemale. 152
laevigatum. 152
pratense. 151
scirpoides. 152
variegatum. 152
Eragrostis. 186
capillaris. 187
Frankii. 186
hypnoides. 186
megastachya. 187
minor. 187
pectinacea. 187
pilosa. 186
Erechtites hieracifolia. 517
ERICACEAE. 418
Erigenia bulbosa. 410
Erigeron annuus. 504
canadensis. 504
divaricatus. 504
philadelphicus. 504
pulchellus. 504
ramosus. 504
ERIOCAULACEAE. 214
Eriocaulon articulatum 214
Eriophorum gracile. 198
virginicum. 199
viridi-carinatum. 199
Erodium cicutarium. 370
Eryngium yuccifolium. 410
Erysimum asperum. 329
cheiranthoides. 329
Erythronium albidum. 221
americanum. 221
Eulophus americanus. 412
Eupatorium altissimum 494
perfoliatum. 494
purpureum. 493
maculatum. 493
serotinum. 494
sessilifolium. 494
urticaefolium. 494
EUPHORBIACEAE. 372
Evening Primroses. 401–404
Everlastings. 505
Evonymus americanus 377
atropurpureus. 377
obovatus. 377
Extermination of plants. 94

FAGACEAE. 277
Fagopyrum esculentum 290
Fagus grandiflora. 278
False Dandelion. 522
Flax. 326
Foxglove. 465
False Indigo. 361
Mermaid Family. 375
Pennyroyal. 446
Pimpernel. 461
Solomon's Seal. 224
Fern. 143
Beech. 143
Bulblet. 147
Chain. 144
Christmas. 127, 145
Clayton's. 148
Cinnamon. 149, 150
Ebony. 144
Florist's. 146, 147
Fragile. 147
Goldie's. 146
Grape. 149, 151
Lady. 145
Marsh. 145
Moonwort. 149, 151
Ostrich. 147
Rattlesnake. 151
Royal. 148
Sensitive. 147
Shield. 145, 146
Walking. 145
Woodsia. 147
Festuca elatior. 189
nutans. 189
octoflora. 189
ovina. 189
Feverfew, American. 506
Feverwort. 51, 477
Field Sorrel. 287
Figworts. 459
Fimbristylis autumnalis 197
castanea. 196
laxa. 197
Fire Pink. 301
Fireweed. 517
Five-finger. 347
Marsh. 347
Flag, Blue. 229
Sweet. 213
Flag Creek. 71
Flame-flower. 303
Flats, Inter-beach. xvii, 20
Inter-dune. 133
Lake. 35
Flax. 367
Yellow. 367
Fleabane. 504
Floerkea proserpinacoides. 375
Floral Areas. xvi
Zones. 5
Flowering Fern Family 148
Spurge. 374
Flower-of-an-hour. 387
Fog-fruit. 443
Forest Fires. 109
Graveyards. 109
Forest Preserves of Cook Co. xxii, 59
Forget-me-not. 439, 441
Forked Chickweeds. 297
Formations, Plant. 117
Fort Creek. 127
Four-o'clock. 294
Foxglove. 465
Fragaria vesca. 346
virginiana. 346
Frasera caroliniensis. 428
Fraxinus americana. 424
nigra. 425
pennsylvanica. 425
quadrangulata. 425
Fringed Gentian. 426, 427
Orchis. 237, 239
Polygala. 371
Froelichia floridana. 294
Frog's Bit Family. 172
Frost Grape. 383
Frostweed. 389
Fuirena squarrosa. 199
Fumaria officinalis. 320
FUMARIACEAE. 320
Fumitory. 320

Galinsoga parviflora. 514
Galium Aparine. 474
asprellum. 475
boreale. 474
circaezans. 474
Claytoni. 475
concinnum. 475
labradoricum. 475
lanceolatum. 474
pilosum. 474
tinctorium. 475
trifidum. 475
triflorum. 475
Gaultheria procumbens 420
Gaura biennis. 404
coccinea. 404
parviflora. 404
Gaylussacia baccata. 421
Gentian, Closed. 428
Five-flowered. 428
Fringed. 96, 426, 427
Horse. 51, 477
Prairie. 427
Soapwort. 426, 428
Yellowish. 428
Gentiana Andrewsii. 428
crinita. 427
flavida. 428
procera. 427
puberula. 428
quinquefolia. 428
Saponaria. 428
GENTIANACEAE. 425
GERANIACEAE. 369
Geranium carolinianum. 370
maculatum. 369, 462
pusillum. 370
Robertianum. 370
Gerardia aspera. 465
auriculata. 465
flava. 465
grandiflora. 465
laevigata. 465
paupercula. 466
pedicularia. 465
purpurea. 466
Skinneriana. 466
tenuifolia. 466
virginica. 465
Geum canadense. 347
rivale. 348
strictum. 347
triflorum. 348
vernum. 348
virginianum. 347
Giant Hyssop. 447
Gilia linearis. 438
Ginger, Wild. 283, 284
Ginseng. 407
Glacial Lake Chicago. xvii
Gleditsia triacanthos. 357
Glenwood Beach xvii, 50, 65, 105
Glyceria borealis. 189
canadensis. 188
grandis. 189
nervata. 188
pallida. 189
septentrionalis. 189

PAGE

Gnaphalium polycephalum 505
uliginosum 505
Goat's Beard 522
Rue 362
Golden Alexanders 412
Corydalis 321
Ragwort 518
Saxifrage 337
Seal 313
Golden-rod 495–498
Goldthread 311
Good-King-Henry 291
Gooseberries 338
Goosefoots 290. 291
Goose Lake, Indiana. 129
Gourds 480
GRAMINEAE 173
Grapes 381, 383
Grass Arrow 181
Barnyard 178
Beach 184
Beard 182
Bent 183
Bermuda 185
Blue 188
Blue-eyed 229
Blue-joint 173, 184
Bottle-brush 193
Canary 180
Crab 174, 175
Darnel, Red 191
Drop-seed 181, 182, 183
Eel 172
Finger 174
Fowl Meadow 188
Foxtail 178, 179, 182
Goose 287
Herd's 182
Indian 173
Johnson 174
June 188
Love 186, 187
Lyme 192
Marram 184
Marsh 184
Mesquite 186
Millet 175, 179
of Parnassus 337
Old-witch 175
Orchard 187
Panic 174–178
Pigeon 179
Purple 183
Rattlesnake 188
Reed 180, 184, 185, 186
Ribbon 180
Sand-binder 184
Sandbur 179
Saw 179
Silver 187
Squirrel-tail 192
Star 227
Sweet 180
Sweet Vernal 180
Tickle 183
Triple-awned 180, 181
Wheat 191, 192
Wire 188
Wood Reed 184
Wool 199
Yellow-eyed 214
Gratiola sphaerocarpa. 463
virginiana 461
Grindelia squarrosa 495
Gromwell 441
Gum-plant 57, 495
Gymnocladus dioica 357
GYMNOSPERMS 156
Gypsophila muralis 301

PAGE

Habenaria bracteata 234
ciliaris 235, 236, 237
clavellata 237
dilatata 237
flava 234
Hookeri 237
hyperborea 237
lacera 237
leucophaea 237
psychodes 239
Hackberry 281
HALORAGIDACEAE 404
HAMAMELIDACEAE 338
Hamamelis virginiana. 339
Harbinger-of-Spring 410
Hardhack 340
Harebell 481
Hawkweeds 525
Hawthorns. 58, 92, 342, 343
Hazelnut 275
Heartsease 288
Heath Family 418
Hedeoma hispida 450
pulegioides 450
Hedge Hyssop 463
Helenium autumnale 514
nudiflorum 514
Heleochloa schoenoides 182
Helianthemum canadense 389
majus 389
Helianthus annuus 510
decapetalus 511
divaricatus 511
giganteus 511
grosseserratus 511
hirsutus 511
laetiflorus 510
Maximiliani 511
microcephalus 511
mollis 510
occidentalis 510
petiolaris 510
scaberrimus 510
strumosus 511
tracheliifolius 511
tuberosus 512
Heliopsis helianthoides 507
scabra 507
Hemerocallis flava 219
fulva 219
Hemicarpha Drummondii 199
micrantha 199
Hemps 281, 293, 294
Hepatica acutiloba 308
triloba 308
Heracleum lanatum 413
Herb Robert 370
Hesperis matronalis 329
Heteranthera dubia 216
Heuchera americana 337
hispida 337
Hibiscus militaris 385
Moscheutos 385
trionum 387
Hickory, Bitternut 275
Pignut 274, 275
Shagbark 274
Hickory Creek 71
Hieracium aurantiacum 525
canadense 525
Greenii 525
Gronovii 525
longipilum 525
marianum 525
paniculatum 525
scabrum 525

PAGE

Hieracium venosum 525
Hierochloe odorata 180
Hollies 376, 377
Hollyhock 384
Honewort 412
Honeysuckle 476
Hop Hornbeam 275
Tree 371
Hordeum jubatum 192
nodosum 192
pusillum 192
vulgare 192
Horehound 447
Water 451
Hornbeam 275
Hornwort 303
Horse-mint 449
Horseradish 330
Horsetails 151
Horse-weed 504
Hosackia americana 361
Hound's Tongue 439
Houstonia caerulea 476
lanceolata 476
purpurea 476
Huckleberry 421
Hudsonia tomentosa 389
Humulus Lupulus 281
Hyacinth, Wild 223
Hybanthus concolor 393
Hydrastis canadensis 313
HYDROCHARITACEAE 172
Hydrocotyle americana 410
umbellata 410
HYDROPHYLLACEAE 438
Hydrophyllum appendiculatum 439
canadense 439
virginianum 438
HYPERICACEAE 387
Hypericum Ascyron 387
canadense 388
cistifolium 388
Drummondii 388
ellipticum 388
gentianoides 388
gymnanthum 388
Kalmianum 388
majus 388
mutilum 388
perforatum 387
prolificum 387
punctatum 387
virginicum 388
Hypoxis hirsuta 227
Hystrix patula 193

Ilex verticillata 377
ILLECEBRACEAE 297
Ilysanthes dubia 461
Impatiens biflora 379
pallida 379
Indiana Dunes Park 110
Indian Pipes 420, 460
Innocence 476
Inula Helenium 505
Iodanthus pinnatifidus 330
Ipomoea coccinea 435
hederacea 434
pandurata 435
purpurea 434
IRIDACEAE 229
Iris, Dwarf 229
germanica 229
pumila 229
versicolor 229
Ironweed 493
Ironwood 275

PAGE

Isanthus brachiatus 446
Isatis tinctoria 326
ISOETACEAE 154
Isoetes melanopoda 154
Isopyrum biternatum. 311
Iva xanthifolia 506
Ivy, American 381
Ground 447
Poison 376

Jack-in-the-Pulpit 211, 212
Jacob's Ladder 438
Jeffersonia diphylla 316
Jersey Tea 381, 382
Jerusalem Oak 290
Jewelweed 379
Jimson Weed 455
Joe Pye Weed 493
JUGLANDACEAE 274
Juglans cinerea 274
nigra 274
JUNCACEAE 216
JUNCAGINACEAE 171
Juncus acuminatus 218
alpinus 218
articulatus 218
balticus 217
brachycephalus 217
brevicaudatus 217
bufonis 216
canadensis 217
dichotomus 216
Dudleyi 216
effusus 217
Greenii 217
marginatus 218
nodosus 217
pelocarpus 217
setaceus 217
tenuis 216
Torreyi 218
Juneberry 341, 342
Juniper 158
Juniperus communis. 158
horizontalis 158
virginiana 158

Kallstroemia maxima. 370
Keys to Plant Groups
Bladderworts 468
Carrot Family 408
Chicory Family 520
Composite Family 484
Dicotyledons, Herbs 242
Shrubs 261
Trees 257
Dodders 436
Ferns and Allies 141
Figwort Family 456
Ginseng Family 406
Gymnosperm Trees and Shrubs 155
Knotweed Family 285
Milkweed Family 431
Mint Family 444
Monocotyledons, Herbs 159
Mustard Family 322
Nightshade Family. 452
Oxalis Family 368
Pea Family 353
Pinks and Chickweeds 295
Trees in Summer 257
Trees in Winter 527
Vines 263
Violet Family 391
Kidney Bean 366
Kinnikinnik 415
Knapweed 519

PAGE

Knotweed.....286, 287
Koeleria cristata..... 185
Krigia amplexicaulis.. 522
virginica..... 522
Kuhnia eupatorioides. 494
Kyllinga pumila..... 195

LABIATAE..... 446
Lactuca canadensis... 523
floridana..... 524
hirsuta..... 523
integrifolia..... 523
ludoviciana..... 524
pulchella..... 524
sagittifolia..... 523
scariola..... 523
spicata..... 524
villosa..... 524
Ladies' Tobacco..... 505
Tresses....239, 240, 241
Lady's Slipper, Showy 95, 234
Small Yellow....230, 231
Small White....233, 234
Stemless..... 234
Yellow.....96, 231
Lady's Thumb..... 289
Lake Beaches xviii, 65, 105
Border Moraines... 41
Calumet.....69, 107
Chicago, Ancient.xvii, 65
Flats..... 35
Wolf, Indiana..... 69
Lakes of Dune Region.6, 69
Lamb's Quarters..... 291
Lamium amplexicaule. 447
maculatum..... 448
Laportea canadensis.. 282
Lappula echinata..... 439
virginiana..... 439
Larch..... 157
Larix decidua..... 157
laricina..... 157
Larkspur..... 312
Lathyrus maritimus... 365
ochroleucus..... 366
palustris..... 365
venosus..... 365
LAURACEAE..... 317
Lead Plant..... 361
Leather Flower..... 311
Leaf..... 420
Wood..... 400
Lechea intermedia.... 390
Leggettii..... 390
maritima..... 390
minor..... 389
stricta..... 390
villosa..... 389
Leek, Wild..... 219
Leersia lenticularis.... 179
oryzoides..... 179
virginica..... 179
LEGUMINOSAE.... 357
Lemna minor..... 213
perpusilla..... 213
trisulca..... 213
LEMNACEAE..... 213
LENTIBULARIACEAE..... 469
Leontodon autumnalis. 522
Leonurus Cardiaca.... 448
Marrubiastrum..... 448
Lepachys columnaris.. 510
pinnata..... 508
Lepidium apetalum... 326
campestre..... 326
sativum..... 326
virginicum..... 326
Leptoloma cognatum.. 174

PAGE

Lespedeza angustifolia. 364
capitata..... 364
frutescens..... 364
hirta..... 364
procumbens..... 364
repens..... 364
violacea..... 364
virginica..... 364
Lesquerella Nuttallii.. 325
Lettuce.....523, 524, 525
Liatris cylindracea... 494
pycnostachya..... 495
scariosa..... 494
spicata..... 495
squarrosa..... 494
Lilac..... 425
LILIACEAE..... 218
Lilies..... 45
Lilium canadense..... 221
philadelphicum..219, 221
superbum..... 221
Lily, Canada.....221, 222
Cow..... 304
Day..... 219
Meadow.....219, 221
Turk's Cap.....220, 221
Water..... 304
LIMNANTHACEAE. 375
Limestone Outcrops.55, 73
Limits of the Flora.... xv
LINACEAE..... 367
Linaria canadensis... 459
minor..... 459
vulgaris..... 459
Linden Family..... 383
Linnaea borealis..... 477
Linum medium..... 367
striatum..... 367
sulcatum..... 367
usitatissimum..... 367
virginianum..... 367
Lion's-foot..... 524
Liparis liliifolia..... 241
Loeselii..... 241
Lippia lanceolata..... 443
Liquorice, Wild..... 474
Liriodendron Tulipifera 313
Lithospermum angustifolium..... 442
arvense..... 441
canescens..... 441
Gmelini.....440, 441
latifolium..... 441
Live-for-ever..... 336
Lizard's Tail.....266, 267
LOASACEAE..... 399
Lobelia cardinalis..... 481
Great Blue.....482, 483
inflata..... 483
Kalmii..... 483
puberula..... 483
spicata..... 483
siphilitica..... 483
LOBELIACEAE..... 481
Lobularia maritima... 325
Locust..... 362
Honey..... 357
Lolium perenne..... 191
Long Lake, Indiana... 129
Lonicera canadensis... 476
dioica..... 476
Sullivantii..... 476
tatarica..... 476
Loosestrifes...400, 401, 423
Lopseed..... 473
Lotus..... 304
Lousewort..... 467
Love Vine..... 437
Lucerne..... 361
Ludvigia alternifolia.. 401

PAGE

Ludvigia palustris ... 402
polycarpa..... 401
sphaerocarpa..... 401
Lungwort..... 441
Lupine..... 350
Lupinus perennis..... 359
Luzula campestris.... 218
Lychnis alba..... 299
caronaria..... 299
Lycium halimifolium.. 455
Lycopersicon esculentum..... 453
LYCOPODIACEAE.. 152
Lycopodium clavatum. 153
complanatum..... 153
inundatum..... 153
lucidulum..... 153
obscurum..... 153
Lycopus americanus.. 451
rubellus..... 451
uniflorus..... 451
virginicus..... 451
Lysimachia Nummularia..... 423
quadrifolia..... 423
terrestris..... 423
thyrsiflora..... 423
LYTHRACEAE..... 400
Lythrum alatum..... 401
Salicaria..... 401

Maclura pomifera.... 281
Madder Family..... 474
Magnolia Family..... 313
Magnoliaceae..... 313
Maianthemum canadense..... 224
Mallows.384, 385, 386, 387
Malva crispa..... 384
moschata..... 384
rotundifolia..... 384
sylvestris..... 384
MALVACEAE..... 384
Mandrake..... 316
Man-of-the-Earth..... 435
Maple, Black.....78, 378
Red..... 378
Silver..... 378
Soft..... 378
Sugar.....78, 378
Maps of Regions—
Chicago Area..... xiv
Des Plaines and Western..... 38
Du Page Valley.... 38
North Shore and Northwestern.... 16
Southeastern..... 102
Southwestern..... 62
The Great Slough.. 124
Mare's-tail..... 504
Marigolds 310, 311, 513, 514
Marrubrium vulgare.. 447
Matricaria chamomilla 516
May Apple.....316, 317
May-weed..... 514
Meadows..... 32
Meadow Beauty..... 401
Meadow-sweet..... 339
Medeola virginiana... 224
Medicago lupulina.... 361
sativa..... 361
Medick, Black..... 361
Melampyrum lineare.. 466
MELASTOMACEAE. 401
Melica mutica..... 187
nitens..... 187
Melilotus alba..... 361
officinalis..... 361

PAGE

MENISPERMACEAE 316
Menispermum canadense..... 316
Mentha arvensis..... 451
piperita..... 451
rotundifolia..... 451
spicata..... 451
Mentzelia nuda..... 399
Menyanthes trifoliata. 430
Mercury..... 373
Mermaid-weed..... 375
Mertensia virginica... 441
Mexican Tea..... 290
Microstylis monophyllos..... 241
Mignonette Family... 332
Milfoil, Water....404, 405
Milkweeds...432, 433, 434
Milkwort Family..371, 372
Millet..... 179
Mimosa, Illinois..... 357
Mimulus alatus..... 461
glabratus..... 461
ringens..... 461
Mints...446, 447, 449–451
Mitchella repens..... 475
Mitella diphylla..... 337
nuda..... 337
Moccasin Flower..... 234
Mollugo verticillata... 297
Monarda citriodora... 449
didyma..... 449
fistulosa..... 449
mollis..... 449
punctata..... 449
Moneywort.....52, 423
Monkey Flower..... 461
MONOCOTYLEDONS..... 165
Monotropa Hypopitys. 420
uniflora..... 420
Moonseeds..... 316
Moosewood..... 400
Moraines....41, 42, 54, 70
Morainal Regions 38, 54, 62
Ridges..... 54
Morning Glories..434, 435
Morus alba..... 282
rubra..... 282
Motherwort..... 448
Mount Forest Island .....xviii, 64, 75
Mount Tom..105, 107, 113
Mouse-ear..... 299
Mugwort..... 517
Muhlenbergia mexicana 181
racemosa..... 181
Schreberi..... 182
sobolifera..... 181
sylvatica..... 181
tenuiflora..... 181
Mulberry..... 282
Mullein, Moth..... 459
Pink..... 299
Mustard..... 325
Ball..... 326
Black..... 327
Family..... 325
Hare's-ear..... 328
Hedge..... 328
Indian..... 327
Tansy..... 328
Tumble..... 328
White..... 327
Wormseed..... 329
Myosotis arvensis..... 441
laxa..... 441
scorpioides..... 439
virginica..... 441
Myosurus minimus... 307

PAGE

Myrica asplenifolia... 273
MYRICACEAE..... 273
Myriophyllum spicatum..... 405
heterophyllum..... 405
verticillatum..... 405
Myrtle..... 430

Naiad..... 170
NAJADACEAE..... 167
Najas flexilis..... 170
Napaea dioica..... 387
Nelumbo lutea..... 304
Nemopanthus mucronata..... 377
Nepeta Cataria..... 447
hederacea..... 447
Neslia paniculata..... 326
Nettle, Dead..... 448
Family..... 280
Hedge..... 448
Horse..... 453
Wood..... 282
New Jersey Tea..... 381
Nicandra Physalodes. 455
Nightshades.....404, 453
Nimble Will..... 162
Nine-bark..... 339
Nut Rush..... 200
NYCTAGINACEAE. 294
Nymphaea advena.... 304
rubrodisca..... 304
NYMPHAEACEAE.. 303
Nyssa sylvatica..... 417

Oak..... 278
Black..... 279
Bur..... 278
Chestnut..... 279
Cow..... 278
Hill's..... 279
Pin..... 279
Post..... 278
Red..... 279
Scarlet..... 279
Shingle..... 280
Swamp White..... 278
White..... 278
Oakesia sessilifolia... 219
Oats..... 185
Oenothera biennis.... 403
cruciata..... 402
fruticosa..... 403
grandiflora..... 403
linearis..... 403
muricata..... 403
pallida..... 403
pumila..... 403
rhombipetala..... 403
serrulata..... 404
speciosa..... 404
Ogden Ditch.....xix, 41
OLEACEAE..... 424
Oleasters..... 400
Olive Family..... 424
ONAGRACEAE..... 401
Onion, Wild..... 219
Onoclea sensibilis..... 147
Struthiopteris..... 147
Onosmodium hispidissimum..... 442
OPHIOGLOSSACEAE 149
Ophioglossum vulgatum..... 149
Opuntia Rafinesquii.. 399
Orach..... 292
Orange-root..... 313
ORCHIDACEAE.... 231
Orchids.....10, 45, 96, 231
Orchis, Bracted..... 234

PAGE

Orchis Fringed, Orange 235, 236, 237
Purple..... 239
Small..... 237
White..... 237
Hooker's..... 237
Northern..... 237
Showy..... 234
Small Green..... 237
spectabilis..... 234
Yellow Green..... 234
Ornithogalum umbellatum..... 223
OROBANCHACEAE. 470
Orobanche fasciculata. 471
uniflora.....470, 472
Orpines..... 336
Osage Orange..... 281
Osmorhiza Claytoni... 411
longistylis..... 411
Osmunda cinnamomea 148, 149, 150
Claytoniana..... 148
regalis..... 148
OSMUNDACEAE.... 148
Ostrya virginiana..... 275
OXALIDACEAE.... 369
Oxalis corniculata.... 369
filipes..... 369
repens..... 369
stricta..... 369
violacea..... 369
Ox-eye..... 507
Daisy..... 516
Oxybaphus albidus... 294
hirsutus..... 294
linearis..... 294
nyctagineus..... 294
Oxypolis rigidior..... 413
Oyster Plant..... 522

Painted Cup.....48, 466
Palos Park..... 76
Panax quinquefolium.. 407
trifolium..... 407
Panic Grass..... 174
Panicum agrostoides.. 175
barbulatum..... 176
boreale..... 176
Boscii..... 178
capillare..... 175
clandestinum..... 178
depauperatum..... 175
dichotomiflorum.... 175
dichotomum..... 176
flexile..... 175
hauchucae..... 176
implicatum..... 176
latifolium..... 178
Leibergii..... 177
Lindheimeri..... 176
linearifolium..... 175
lucidum..... 176
meridionale..... 176
miliaceum..... 175
oligosanthes..... 177
perlongum..... 175
praecocius..... 177
scoparioides..... 177
scoparium..... 178
Scribnerianum..... 177
sphaerocarpon..... 177
subvillosum..... 177
spretum..... 176
tennesseense..... 177
tsugetorum..... 177
verrucosum..... 174
villosissimum..... 177
virgatum..... 175
PAPAVERACEAE... 318

PAGE

Papaw..... 316
Parietaria pennsylvanica..... 282
Parnassia caroliniana. 337
Parsley Family..... 410
Prairie..... 413
Parsnip.....411, 412, 413
Parthenium integrifolium..... 506
Partridge Berry..... 475
Paspalum setaceum... 174
Pasque Flower..... 308
Pastinaca sativa..... 413
Pea, Beach..... 365
Marsh..... 365
or Pulse Family.... 357
Partridge.....357, 358
Wild Sweet..... 362
Peach..... 352
Peanut, Hog..... 366
Pear..... 340
Prickly.....398, 399
Pedicularis canadensis. 467
lanceolata..... 467
Pellaea atropurpurea.. 144
Pellitory..... 282
Peltranda virginica... 212
Penny Cress..... 325
Pennyroyal..... 450
Pennywort..... 410
PENTHORACEAE.. 336
Penthorum sedoides... 336
Pentstemon albidus... 460
hirsutus..... 460
laevigatus..... 460
Pepper Family..... 267
Peppergrass..... 326
Peppermint..... 451
Pepper-root..... 330
Petalostemum candidum..... 362
foliosum..... 362
purpureum..... 362
Petunia violacea..... 455
Phalaris arundinacea.. 180
canariensis..... 180
Phaseolus perennis.... 366
Phegopteris hexagonoptera..... 143
polypodioides..... 143
Phleum pratense..... 182
Phlox argillacea..... 438
bifida..... 438
Blue.....47, 438
divaricata..... 438
Ferris's..... 438
glaberrima..... 437
pilosa..... 437
Prairie..... 437
Red.....47, 437
Smooth..... 437
Sand.....122, 438
Sweet William...48, 437
Phragmites communis. 186
Phryma Leptostachya. 473
PHRYMACEAE..... 473
Physalis Alkekengi.... 454
angulata..... 454
barbadensis..... 454
heterophylla..... 454
longifolia..... 454
pruinosa..... 454
pubescens..... 454
pumila..... 454
subglabrata..... 454
virginiana..... 454
Physocarpus opulifolius 339
Physostegia denticulata..... 447
virginiana..... 447

PAGE

Phytolacca decandra.. 294
PHYTOLACCACEAE 294
Pickerel-weed.....215, 216
Pigeon Berry..... 417
Pignut.....59, 274, 275
Pigweed.....291, 292
Pilea pumila..... 282
Pimpernel ...423, 424, 461
PINACEAE..... 156
Pine, Austrian.....11, 157
Family..... 156
Forest, Waukegan.. 5, 11
Jack.....80, 157
Pitch.....11, 156
Scotch.....11, 157
Table Mountain..11, 156
White.....80, 156
Pinesap..... 420
Pinweeds....388, 389, 390
Pink Family..... 297
Fire..... 301
Mullein..... 299
Rose..... 425
Pinus Banksiana..... 157
laricio..... 157
pungens..... 156
rigida..... 156
Strobus..... 156
sylvestris..... 157
Pipes..... 151
Pipewort Family..... 214
Pipsissewa..... 418
Pitcher Plant.....95, 333
Plane Tree Family.... 339
PLANTAGINACEAE 473
Plantago aristata..... 474
cordata..... 473
lanceolata..... 473
major..... 473
Purshii..... 473
Rugelii..... 473
virginica..... 474
Plantain.....473, 474
Indian.....48, 517, 518
Mud..... 216
Rattlesnake..... 241
Robin's..... 504
PLATANACEAE.... 339
Platanus occidentalis.. 339
Pleurisy-root..... 432
Plum, Beach..... 351
Canada..... 351
Chickasaw..... 351
Sand..... 351
Wild..... 351
Wild Goose..... 351
Poa annua..... 187
brachyphylla..... 188
Chapmaniana..... 185
compressa..... 188
debilis..... 188
pratensis..... 188
sylvestris..... 188
triflora..... 188
Podophyllum peltatum 316
PODOSTEMACEAE. 336
Podostemum ceratophyllum..... 336
Pogonia, Nodding.... 239
ophioglossoides..... 239
Rose..... 239
trianthophora..... 239
Poinsettia cuphosperma..... 374
dentata..... 374
heterophylla..... 375
Poison Hemlock..... 411
Ivy..... 376
Sumach..... 376
Pokeweeds..... 294

PAGE

Polanisia graveolens . 332
trachysperma..... 332
POLEMONIACEAE. 487
Polemonium reptans.. 438
Polygala cruciata..... 372
Fringed..... 371
incarnata..... 372
pauciflora..... 371
polygama..... 371
sanguinea..... 372
Senega..... 371
verticillata..... 372
POLYGALACEAE... 371
POLYGONACEAE... 286
Polygonatum biflorum. 224
commutatum..... 224
Polygonella articulata. 290
Polygonum acre..... 288
amphibium..... 288
arifolium..... 289
aviculare..... 287
Careyi..... 288
cilinode..... 289
Convolvulus..... 289
dumetorum..... 290
erectum..... 287
exsertum..... 287
Hydropiper..... 288
hydropiperoides.... 289
lapathifolium..... 288
Muhlenbergii..... 288
orientale..... 289
pennsylvanicum.... 288
Persicaria..... 289
ramosissimum..... 287
sagittatum..... 289
scandens..... 289
tenue..... 287
virginianum..... 289
Polymnia canadensis.. 505
POLYPODIACEAE.. 143
Polystichum acrostichoides..... 145
Polytaenia Nuttallii.. 413
Pondweeds...167, 168, 169
Pontederia cordata.... 215
PONTEDERIACEAE 215
Poor Man's Weather-glass..... 424
Poplar, Aspen..... 272
Balsam..... 272
Carolina..... 273
Downy..... 272
Lombardy..... 273
Silver..... 272
Poppy, Prickly..... 318
Populus alba..... 272
balsamifera..... 272
candicans..... 272
deltoides..... 273
grandidentata..... 272
heterophylla..... 272
nigra..... 273
tremuloides..... 272
Portulaca oleracea.... 303
PORTULACACEAE. 301
Potamogeton americanus..... 167
amplifolius..... 167
angustifolius..... 168
foliosus..... 169
Friesii..... 169
heterophyllus..... 168
hybridus..... 169
illinoensis..... 168
interruptus..... 170
lucens..... 168
natans..... 167
pectinatus..... 170
pulcher..... 167

PAGE

Potamogeton pusillus. 169
rectifolius..... 167
Richardsonii..... 168
Robbinsii..... 170
strictifolius..... 169
Vaseyi..... 169
zosterifolius..... 168
Potentilla Anserina... 347
argentea..... 346
arguta..... 346
canadensis..... 347
fruticosa..... 347
monspeliensis..... 346
palustris..... 347
recta..... 347
tridentata..... 347
White..... 346
Prenanthes alba..... 524
altissima..... 524
aspera..... 524
crepidinea..... 524
racemosa..... 524
trifoliata..... 524
Primrose Family..... 422
PRIMULACEAE.. .. 422
Prince's Feather... .. 289
Proserpinica palustris. 405
Prunella vulgaris..... 447
Prunus americana.... 352
angustifolia..... 351
Cerasus..... 351
hortulana..... 351
maritima..... 351
nigra..... 351
pennsylvanica..... 351
Persica..... 352
pumila..... 351
serotina..... 351
virginiana..... 351
Psedera quinquefolia.. 381
Psilocarya scirpoides.. 196
Psoralea tenuiflora.... 361
Ptelea trifoliata..... 371
PTERIDOPHYTA... 143
Pteris aquilina..... 144
Puccoon
...48, 313, 440, 441, 442
Pulse Family..... 357
Purple Avens..... 348
Cone-flower..... 508
Gerardia..... 466
Milkweed..... 432
Purslanes....301, 303, 402
Putty-root..... 241
Pycanthemum flexuosum..... 450
pilosum..... 450
virginianum..... 450
Pyrola americana..... 420
asarifolia..... 420
chlorantha..... 418
elliptica.....418, 419
secunda..... 418
Pyrus americana..... 342
arbutifolia..... 340
baccata..... 340
communis..... 340
coronaria..... 340
ioensis..... 340
Malus..... 340
melanocarpa..... 342
Soulardi..... 340

Quercus alba..... 278
bicolor..... 278
coccinea..... 279
ellipsoidalis..... 278
imbricaria..... 280
macrocarpa..... 278
Michauxii..... 278

PAGE

Quercus Muhlenbergii. 279
palustris..... 279
rubra=maxima 279
stellata..... 278
velutina..... 278
Quillworts..... 154

Radicula aquatica. .. 330
Armoracia..... 330
Nasturtium-aquaticum..... 329
obtusa..... 329
palustris.....329, 330
sinuata..... 329
sylvestris..... 329
Radish..... 327
Ragweeds.....506, 507
Ragwort, Golden...48, 518
RANUNCULACEAE. 305
Ranunculus abortivus. 305
acris..... 307
aquatilis..... 305
bulbosus..... 307
circinatus..... 305
Cymbalaria..... 305
delphinifolius... .. 305
fascicularis..... 307
pennsylvanicus..... 307
recurvatus..... 305
repens..... 307
sceleratus..... 305
septentrionalis..306, 307
Rape..... 327
Raphanus Raphanistrum..... 327
sativus..... 327
Raspberries..... 348
Rattle-box..... 359
Rattlesnake Master... 410
Rattlesnake-root..... 524
Ravines of the North Shore....19, 22, 23, 24
Red Top..... 183
Red-berried Elder.... 479
Redbud..... 359
Red-root..... 292
Reseda alba..... 332
RESEDACEAE..... 332
RHAMNACEAE..... 379
Rhamnus alnifolia.... 381
cathartica..... 381
Frangula..... 381
lanceolata..... 381
Rhexia virginica..... 401
Rhus canadensis..... 376
copallina..... 376
glabra..... 376
Toxicodendron..... 376
typhina..... 376
Vernix..... 376
Ribes Cynosbati..... 338
floridum..... 338
gracile..... 338
oxyacanthoides..... 338
rotundifolium..... 338
triste..... 338
vulgare..... 338
Rice, wild..... 179
Richweed..... 282
Riverweeds..... 336
Robinia Pseudo-Acacia 362
Rock Outcrops.....55, 73
Rocket, Dyer's..... 332
Rockrose..... 389
Rosa acicularis..... 349
blanda..... 349
carolina..... 350
humilis..... 350
rubiginosa..... 350
setigera..... 349

PAGE

Rosa virginiana..... 350
ROSACEAE..... 339
Rose, Climbing..... 349
Dwarf..... 350
Family..... 339
Illinois.....52, 349
Prickly..... 349
Shining..... 350
Swamp..... 350
Sweet Brier..... 350
Wild..... 349
Rosin-weed..... 506
Rotala ramosior..... 400
RUBIACEAE..... 474
Rubus allegheniensis.. 348
hispidus..... 349
idaeus..... 348
occidentalis..... 348
recurvans..... 348
triflorus..... 348
villosus..... 349
Rudbeckia fulgida.... 508
hirta..... 508
laciniata..... 508
subtomentosa..... 508
triloba..... 508
Rue Anemone..... 308
Family..... 370
Goat's..... 362
Meadow.....307, 308
Ruellia ciliosa..... 471
strepens..... 471
Rumex Acetosella.... 287
altissimus..... 286
Britannica..... 286
crispus..... 286
elongatus..... 286
obtusifolius..... 286
sanguineus..... 287
verticillatus..... 286
Rush.....7, 216, 217, 218
Bald..... 196
Beak.....199, 200
Club..... 197
Family..... 216
Horned..... 199
Nut..... 200
River..... 198
Scouring.....151, 152
Spike..... 195
Twig..... 200
RUTACEAE..... 370
Rutabaga..... 328
Rye.....191, 192, 193
Rynchospora alba.... 199
capillacea..... 200
corniculata..... 199
cymosa..... 199
glomerata..... 200
macrostachya..... 199

Sabatia angularis..... 425
Sag Outlet..... 70
Sage.....446, 448
Sagittaria arifolia..... 171
graminea..... 172
heterophylla..... 171
latifolia..... 171
St. John's-wort....387, 388
SALICACEAE..... 267
Salix alba..... 268
amygdaloides..... 268
candida..... 271
coactilis..... 271
cordata..... 269
discolor..... 270
fragilis..... 268
glaucophylla 269
humilis..... 271

PAGE

Salix longifolia..... 268
lucida..... 268
nigra..... 268
pedicellaris..... 270
petiolaris..... 271
purpurea..... 272
rostrata..... 271
sericea..... 271
serissima..... 268
syrticola..... 270
tristis..... 271
Salsify.....57, 522
Salsola Kali..... 292
Salt Creek..... 39
Saltwort..... 292
Salvia lanceaefolia.... 448
Sambucus canadensis.. 479
racemosa..... 479
Samolus floribundus... 423
Sandalwood Family... 283
Sandbur..... 179
Sand Dunes..... 61
Ridge Flora..... 81
Ridges.....xviii, 10
Sandwort.....297, 298
Sanguinaria canadensis 318
Sanicle..... 410
Sanicula canadensis... 410
gregaria..... 410
marilandica..... 410
trifoliata..... 410
SANTALACEAE.... 283
SAPINDACEAE..... 379
Saponaria officinalis... 301
vaccaria..... 301
Sarracenia purpurea... 333
SARRACENIACEAE 333
Sarsaparilla..... 407
Sassafras variifolium.. 318
Satureja glabella..... 450
hortensis..... 450
Saugenash Forest..... 33
SAURURACEAE.... 267
Saururus cernuus..266, 267
Saxifraga pennsylvanica..... 337
SAXIFRAGACEAE.. 337
Saxifrage..... 337
Scheuchzeria palustris. 171
Scirpus americanus... 197
atrocinctus..... 198
atrovirens..... 198
cyperinus..... 198
debilis..... 197
fluviatilis..... 198
georgianus..... 198
lineatus..... 198
occidentalis..... 198
pauciflorus..... 197
polyphyllus..... 198
Smithii..... 197
subterminalis..... 197
Torreyi..... 197
validus..... 198
Scleria pauciflora..... 200
reticularis..... 200
triglomerata..... 200
verticillata..... 200
Scrophularia leporella. 459
marilandica..... 459
SCROPHULARIACEAE..... 459
Scutellaria galericulata 446
lateriflora..... 446
parvula..... 446
versicolor..... 446
Sea Rocket..... 327
Secale cereale..... 191
Sedges...193, 196, 204–210
Sedum acre..... 336

PAGE

Sedum purpureum ... 336
ternatum..... 336
Seedbox..... 401
Selaginella apus..... 154
rupestris..... 153
SELAGINELLACEAE..... 153
Self-heal..... 447
Senecio aureus..... 518
Balsamitae..... 518
obovatus..... 518
Senna.....357, 359
Sensitive Plant, Wild.. 359
Setaria glauca..... 178
italica..... 179
verticillata..... 178
viridis..... 179
Seymeria macrophylla. 465
Shepherd's Purse..... 326
Shepherdia canadensis. 400
Shin Leaf.....418, 419
Shooting Star.....47, 424
Shore Dunes..... 113
Plants..... 24
Slopes..... 112
Sickle-pod..... 332
Sicyos angulatus..... 480
Sida spinosa..... 384
Silene antirrhina..... 299
armeria..... 299
latifolia..... 301
nivea..... 301
noctiflora..... 299
stellata..... 301
virginica..... 301
Silphium integrifolium. 506
laciniatum..... 506
perfoliatum..... 506
terebinthinaceum.. 506
SIMARUBACEAE.. 371
Sisymbrium altissimum 328
canescens..... 328
Irio..... 328
officinale..... 328
Thalianum..... 329
Sisyrinchium albidum. 229
angustifolium..... 229
gramineum..... 229
mucronatum..... 229
Sium cicutaefolium... 411
Skullcap..... 446
Skunk Cabbage 54, 212, 213
Slough, The Great.... 124
Sloughs and Swales, Ind..... 123
Sloughs and Ponds, Flora..... 88
Smartweeds..... 288
Smilacina racemosa... 223
stellata..... 223
trifolia..... 223
Smilax ecirrhata..... 226
glauca..... 227
herbacea..... 226
hispida..... 227
rotundifolia..... 227
Snakehead.....460, 461
Snakeroots.....371, 410
Sneezeweed..... 514
Snowberry..... 477
Snow-on-the-Mountain 374
Soil and Plants.....91, 97
SOLANACEAE..... 453
Solanum carolinense.. 453
Dulcamara..... 453
elaeagnifolium..... 453
nigrum..... 453
rostratum..... 453
triflorum..... 453

PAGE

Solidago altissima.... 497
arguta..... 496
bicolor..... 495
caesia..... 495
canadensis..... 497
graminifolia..... 498
hispida..... 495
juncea..... 496
latifolia..... 495
missouriensis..... 497
neglecta..... 496
nemoralis..... 497
ohioensis..... 498
patula..... 496
racemosa..... 496
Riddellii..... 498
rigida..... 498
rugosa..... 497
serotina..... 497
speciosa..... 496
tenuifolia..... 498
uliginosa..... 496
ulmifolia..... 497
Solomon's Seal..... 224
False..... 223
Sonchus arvensis..... 522
asper..... 523
oleraceus..... 523
Sorghastrum nutans.. 173
Sorghum halapense... 174
Sorrel, Sheep..... 287
Wood..... 369
Sour Gum..... 417
SPARGANIACEAE.. 166
Sparganium americanum..... 166
euricarpum..... 166
minimum..... 166
simplex..... 166
Spartina Michauxiana. 185
Spatter-dock..... 304
Spearmint..... 451
Specularia perfoliata.. 481
Speedwell..... 463
Spergula arvensis..... 297
Spergularia marina... 297
SPERMATOPHYTA. 155
Spermolepis patens... 411
Sphenopholis obtusata. 184
pallens..... 184
Spice Bush..... 318
Spider-flower..... 332
Spiderworts..... 215
Spikenard..... 407
Spiraea alba..... 339
latifolia..... 339
tomentosa..... 339
Spiranthes cernua.... 241
gracilis.....239, 240
Spirodela polyrhiza... 213
Sporobolus asper..... 182
clandestinus..... 182
cryptandrus..... 183
heterolepis..... 183
junceus..... 183
neglectus..... 183
vaginiflorus..... 182
Spring Beauty....301, 303
Spurges..372, 373, 374, 375
Spurrey..... 297
Squirrel corn..... 320
Stachys cordata..... 448
hyssopifolia..... 448
palustris..... 448
tenuifolia..... 448
Staff Tree Family.... 377
Staphylea trifolia..... 378
STAPHYLEACEAE.. 378
Star Flower.....424, 514
Grass..... 227

PAGE

Star of Bethlehem.... 223
Starry Campion..... 301
Starwort, Water..... 375
Steironema ciliatum... 423
lanceolatum..... 423
quadriflorum..... 424
Stellaria aquatica..... 298
longifolia..... 298
meadia..... 298
Stenophyllus capillaris. 196
Stick-tight..... 513
Stipa avenacea..... 180
spartea..... 180
Stonecrops..... 336
Stony Island..... xix
Stone-root..... 451
Strawberry..... 346
Blite..... 291
Bush..... 377
Strophostyles helvola.. 366
pauciflora..... 366
umbellata..... 366
Stylophorum diphyllum..... 320
Sumac.....375, 376
Fragrant..... 376
Poison..... 376
Shining..... 376
Smooth..... 376
Staghorn..... 376
Sundew.....334, 335
Sundrops..... 403
Sunflower....510, 511, 512
Symplocarpus foetidus 213
Swamp Meadows..... 30
Sweet William....48, 437
Sycamore..... 339
Symphoricarpos orbiculatus..... 477
racemosus..... 477
Syringa vulgaris..... 425

Taenidia integerrima.. 412
Talinum rugospermum 303
teretifolium..... 303
Tamarack..... 157
Tamarack Swamps 109, 130
Tanacetum vulgare... 516
Tansy..... 516
Taraxacum erythrospermum..... 522
officinale..... 522
Tear-thumb..... 289
Teasels..... 480
Tephrosia virginiana.. 362
Teucrium canadense.. 446
occidentale..... 446
Thalictrum dasycarpum..... 307
dioicum..... 307
polygamum..... 308
revolutum..... 308
Thaspium aureum.... 412
barbinode..... 412
Thimbleweed..... 311
Thismia americana... 231
Thistle, Bull..... 518
Canada..... 519
Hill's..... 519
Pasture..... 519
Prairie..... 519
Russian..... 292
Sand..... 518
Sow.....522, 523
Star..... 519
Swamp..... 519
Tall..... 519
Thlaspi arvense..... 325
Thorn Apple..... 455

PAGE

Thorn Creek 70
Thuja occidentalis 157
THYMELAEACEAE. 399
Tick Trefoil..362, 363, 364
Tickseed.....512, 513, 514
Tilia americana 384
TILIACEAE 383
Till 71
Timothy 182
Tithymalopsis corollata 374
Tithymalus commutatus 374
cyparissias 374
obtusata 374
peplus 374
Toadflax 459
False 283
Tofieldia glutinosa 218
Tolleston Beach .....xviii, 67, 105
Tomato 453
Tomato, Strawberry .. 454
Toothwort 330
Touch-me-nots....379, 380
Tradescantia brevicalus 215
reflexa 215
virginiana 215
Tragopogon porrifolius 522
pratensis 522
Tree of Heaven 371
Trees of Chicago Plain 79
Representative 59
Tribulus terrestris ... 370
Trientalis americana .. 424
Trifolium agrarium ... 360
arvense 360
hybridum 360
incarnatum 360
pratense 360
procumbens 360
reflexum 360
repens 360
stoloniferum 360
Triglochin maritima .. 171
palustris 171
Trillium cernuum 226
declinatum 226
grandiflorum....225, 226
recurvatum 224
sessile.....53, 224
Triosteum aurantiacum 477
perfoliatum 477
Triplasis purpurea 186
Triticum vulgare 191
Tulip Tree.80, 313, 314, 315
Tumbleweeds.....290, 293
Turnip 327
Indian 211, 212
Turtlehead.....460, 461
Twayblade 241
Twin-flower.....477, 478
Twinleaf.....51, 316
Typha angustifolia ... 165
latifolia 165
TYPHACEAE 165

PAGE

Ulmus americana 281
campestris 280
fulva 280
racemosa 281
UMBELLIFERAE ... 410
Umbrella-wort 294
Urtica dioica 282
gracilis 282
URTICACEAE 280
Utricularia cornuta ... 469
gibba 469
intermedia 469
minor 469
purpurea 469
resupinata 469
vulgaris 469
Uvularia grandiflora .. 219

Vaccinium atrococcum 422
canadense 421
corymbosum 422
macrocarpon 422
Oxycoccus 422
pennsylvanica 421
vacillans 421
Valerians 48, 479, 480
Valeriana edulis 480
VALERIANACEAE .. 479
Vallisneria spiralis ... 172
Valparaiso Moraine .....xvi, 41, 64, 70
Vegetation Zones 112
Velvet Leaf 384
Venus's Looking Glass 481
Verbascum Blattaria .. 459
Thapsus 459
Verbena angustifolia .. 442
bipinnatifida 443
bracteosa 443
hastata 442
stricta 443
urticaefolia 442
VERBENACEAE 442
Verbesina helianthoides 512
Vernonia altissima 493
fasciculata 493
glauca 493
noveboracensis 493
Veronica agrestis 463
americana 463
Anagallis-aquatica .. 463
arvensis 463
peregrina 463
scutellata 463
serpyllifolia 463
virginica 463
Vervains 442, 443
Vetch 362, 364, 365
Vetchling 365, 366
Viburnum acerifolium. 477
cassinoides 479
dentatum 479
Lentago 479
Opulus 477
prunifolium 479
pubescens 477

PAGE

Vicia americana 365
caroliniana 365
Cracca 365
sativa 364
villosa 365
Vinca minor 430
Vine Family 381
Matrimony 455
Viola affinis 395
blanda 396
canadensis 397
conspersa 393
cucullata 393
fimbriatula 395
incognita 396
lanceolata 396
nephrophylla 393
odorata 396
pallens 396
palmata 395
papilionacea....393, 394
pedata 393
pedatifida 395
primulifolia 396
pubescens 396
rostrata 397
sagittata 395
scabriuscula 397
sororia 395
striata 52, 397
triloba 395
VIOLACEAE 393
Violet, Arrow-leaved .. 395
Bird-foot 392, 393
Blue 393
Canada 397
Dame's 329
Dog 397
Dog's-tooth 221
Family 393
Green 393
Hybrids 9
Lance-leaved 396
Larkspur 395
Long-spurred 397
Palmate 395
Sweet 396
White 396, 397
Wood; Hairy 395
Yellow 396, 397
Virginia Cowslip ...51, 441
Creeper 381
Virgin's Bower 311
VITACEAE 381
Vitis aestivalis 383
bicolor 383
cinerea 383
cordifolia 383
labrusca 383
palmata 383
vulpina 383

Waahoo 377
Wall-flower 329
Wall Rocket 328
Walnut 274
Water Cress 329
Hemlock 411

PAGE

Water Lily.....303, 304
Milfoil 404, 405
Pepper 289
Shield 304
Waterleaf 438, 439
Water-weed 172
Waterworts 389
Waukegan Moorlands. 1, 8
Wheat 191
Cow 467
Wild Garlic 219
Ginger.....283, 284
Indigo.....45, 359
Potato-vine 435
Wild Flower Preservation Society xxi
Willow, Autumn 268
Black.....83, 268
Crack 268
Dune 270
Dwarf.....83, 271
Family 267
Heart-leaved 269
Hoary 271
Myrtle 83, 270
Peach-leaved 83, 268
Prairie 271
Purple 272
Pussy.....83, 270
Sage or Bog 83, 271
Sand Bar 268
Shining 268
Short-leaved 269
Silky 271
Smooth.....83, 209, 269
Water 471
White 268
Yellow 268
Willow-herb 402
Wing-stem 512
Wintergreen 420
Witch-hazel.....338, 339
Withe-rod 479
Wolffia columbiana ... 214
Woodsia obtusa 147
Woodwardia virginica. 144
Wormseed 290
Wormwood.....516, 517

Xanthium canadense .. 507
commune 507
echinatum 507
XYRIDACEAE 214
Xyris caroliniana 214
flexuosa 214

Yam, Wild 227
Yarrow 514, 515

Zannichellia palustris . 170
Zanthoxylum americanum 370
Zizania palustris 179
Zizia aurea 412
cordata 412
ZYGOPHYLLACEAE 370

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